

**ARLINGTON PUBLIC SCHOOLS**

*In accordance with the provisions of the Massachusetts General laws, Chapter 30A, Section 20, notice is hereby given for the following meeting of the:*

***Arlington School Committee  
School Committee Regular Meeting  
Thursday, March 26, 2015  
6:30 PM***

*Arlington High School  
School Committee Room  
869 Massachusetts Avenue, 6th Floor  
Arlington, MA 02476*

*6:30 p.m. Open Meeting*

- *Ottoson Art work*

*6:35 p.m. Public Participation*

*6:50 p.m. Technology One to One Pilot Presentation*

- *The 610 cluster will be presenting on initial results of their one to one pilot. They will be presenting on data accumulated this year and showing samples of student work.*

*7:20 p.m. Sanborn Foundation Update, E. Smith-Devile, L. August*

*7:30 p.m. FY 16 Budget Update on Finance Presentation*

*7:45 p.m. School Committee letter to Foundation Budget Review Commisson*

*7:50 p.m. Statement of Interest Arlington High School*

- *Vote to approve the AHS Statement of Interest*

*8:05 p.m. Superintendent's Report K. Bodie*

*8:20 p.m. Consent Agenda*

*All items listed with an asterisk are considered to be routine and will be enacted by one motion. There will be no separate discussion of these items unless a member of the committee so requests, in which event the item will be considered in its normal sequence:*

- *Approval of Warrant #15122 dated March 12, 2015 in the amount of \$643,068.73.*
- *Approval of minutes: Regular School Committee meeting March 12, 2015 and the 2nd Public Hearing on FY 16 Budget Meeting minutes, March 12, 2015.*

*8:25 p.m. Subcommittee & Liaison Reports & Announcements*

*Policies & Procedures, J. Pierce*

*Budget, C. Starks*

*Community Relations, P. Schlichtman*

*Curriculum, Instruction & Assessment & Accountability, K. Allison-Ampe*

*Facilities, J. Thielman*

*Special Study Group on Superintendent's Evaluation, B. Hayner*

*Vote to approve the four Goals and Survey for Superintendent Bodie*

- *Practice Goal 2014-2015*
- *Student Achievement Goal 2014-2015*
- *School Committee Superintendents Goals, 3.4 and 4.3*
- *Questionnaire on Administrative Survey on Superintendent*

*School Committee and Human Rights Commission Joint Subcommittee*

*Administration Contract Review Committee*

*Announcements*

*Chair*

- *Vote to hold the School Committee Organizational Meeting, April 9, 2015 at 6:15 p.m.*

*8:40 p.m. Executive Session*

*To conduct strategy sessions in preparation for negotiations with union and/or nonunion personnel or contract negotiations with union and /or nonunion in which if held in an a open meeting may have a detrimental effect.*

*To conduct strategy with respect to collective bargaining or litigation, in which if held in an open meeting may have a detrimental effect, Collective bargaining may also be conducted.*

*To discuss the deployment of security personnel or devices, or strategies with respect thereto:*

*9:00 p.m. Adjournment*

*The listings of matters are those reasonably anticipated by the Chair, which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law.*

*Stated times and time amounts, listed in parenthesis, are the estimated amount of time for that particular agenda item. Actual times may be shorter or longer depending on the time needed to fully explore the topic.*

*Submitted by Bill Hayner, Chair*

*Correspondence Received:*

- *email regarding school calendar and start times of high school from AH*
- *legal spreadsheet*
- *enrollment numbers as of March 23, 2015*
- *draft minutes from 3/12/2015 regular meeting*
- *draft minutes from Public Hearing on 3/12/2015 on FY 16 Budget*
- *Warrant dated 3/12/2015*
- *OMS artwork*
- *Stratton Renovation Update*
- *AHS Honors Orchestra, S. D'Agostino, brochure March 27, 2015*
- *Commissioner's Update 3/20/2015*
- *Staff Recognition Save the Date May 21, 2015 at OMS*
- *Parents letter of support of proposed plan for elementary release*



## Town of Arlington, Massachusetts

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### 6:30 p.m. Open Meeting

#### Summary:

- Ottoson Art work

#### ATTACHMENTS:

Type	Description
 Backup Material	OMS Artwork description updated 3 26 2015





## **Town of Arlington, Massachusetts**

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### **6:50 p.m. Technology One to One Pilot Presentation**

#### **Summary:**

- The 610 cluster will be presenting on initial results of their one to one pilot. They will be presenting on data accumulated this year and showing samples of student work.

#### **ATTACHMENTS:**

Type	Description
 Presentation	Technology One to One Pilot Presentation

# 1:1 iPad Pilot Final Report

2013-2014 School Year

610s Cluster: Johanna Bunn, Julie Gallagher,  
Jessica Keweshan, Lillian O'Donnell, Alison Sancinito  
Ottoson Middle School

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## **I. Summary of Findings**

The 610s teachers, students, and parents all agree that the iPads have helped to:

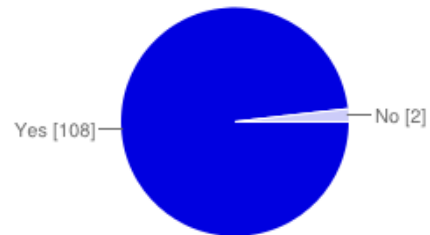
- increase student engagement and leadership in learning
- develop digital literacy and citizenship in students
- improve student organizational skills
- increase time on learning in the classroom
- provide more differentiated instruction based on student needs
- facilitate the writing process, especially for students with learning differences
- improve student research skills and ability to evaluate sources

**98% of 610s students, 98% of 610s parent respondents (84 total), and 100% of 610s teachers feel that the iPads have had a positive impact on student learning this year.**

We are grateful to have had the opportunity to expand our instructional techniques and our own learning through participating in this pilot program, and we are eager to continue and expand this program in the future.

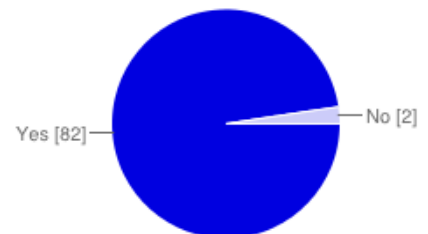
### **Students**

Has the 1:1 iPad program had a positive impact on your academic experience this year?



### **Parents**

Has the 1:1 iPad program had a positive impact on your student's academic experience this year?



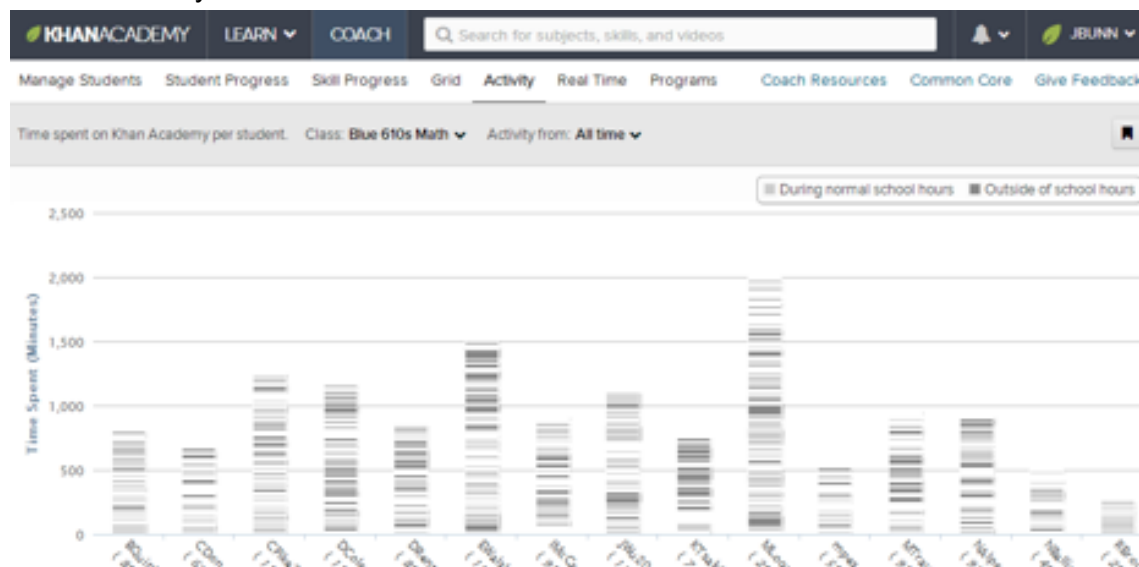
## **II. Mathematics - Teacher Perspective (Johanna Bunn)**

### **Khan Academy**

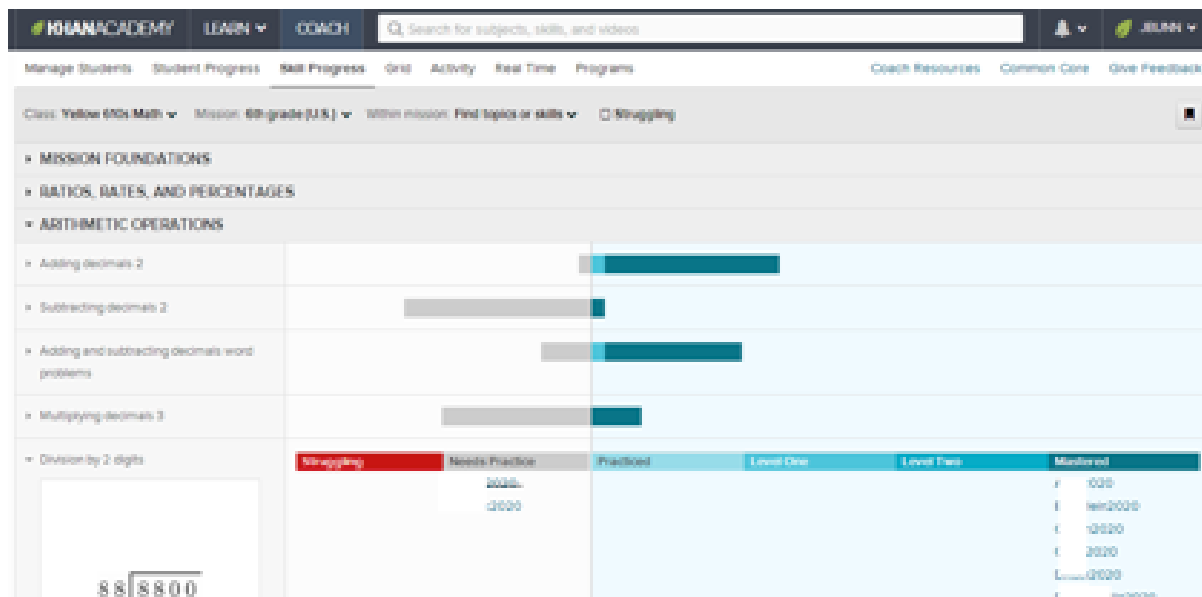
The iPads have increased the ability for students to receive specialized instruction in mathematics class. Furthermore, it has decreased the amount of student down time. Students ALWAYS have something that they can be doing because of the weekly Khan Academy assignments that they are asked to work on. Khan Academy is a website that challenges students to solve problems and adapts to what they know or do not know. Students are asked to answer mathematics questions to gain points and badges. Students work on Khan Academy in school and at home. Students need to work to achieve mastery on different topics.

As a group the cluster has used Khan Academy on their iPads in school and at home to master cumulatively 12,764 topics. This represents an average of about 120 topics per student. In total the students have spent over 75,000 minutes on Khan Academy or an average of 715 minutes per student. This means that each student has gained an additional 12 hours or two full school days of just mathematics instruction. Students have spent 7,541 minutes of that time watching videos on topics that they needed to learn more about, and 58,650 minutes of that time solving exercises and challenges. Cumulatively the Ottoson 610s accumulated 15,284,208 Khan Points while they were learning math.

Khan Academy's online statistics allow me to see when and where students are working on Khan Academy.

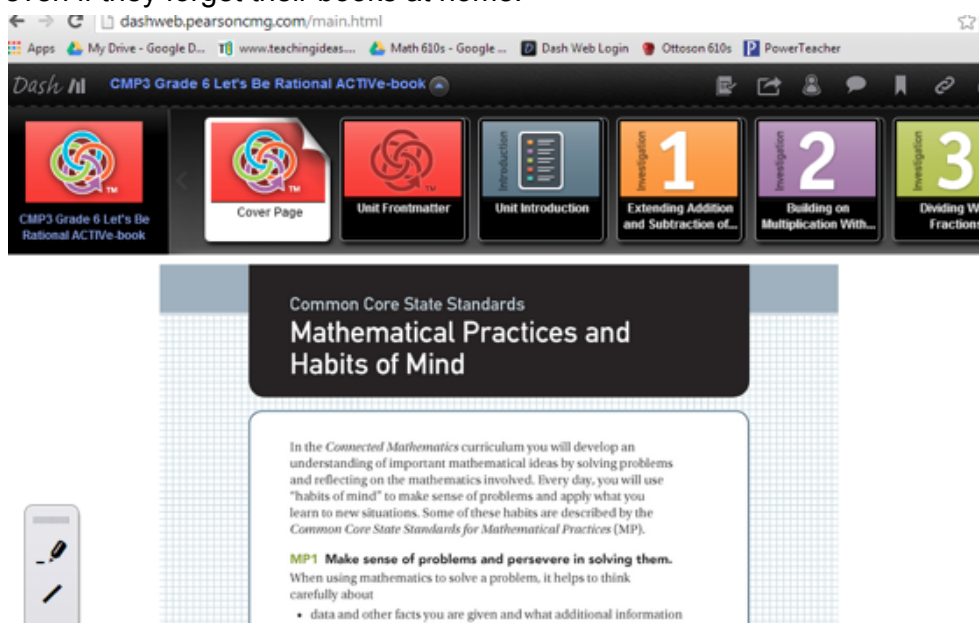


It also allows me to see what skills students have mastered, and where they might need more work.

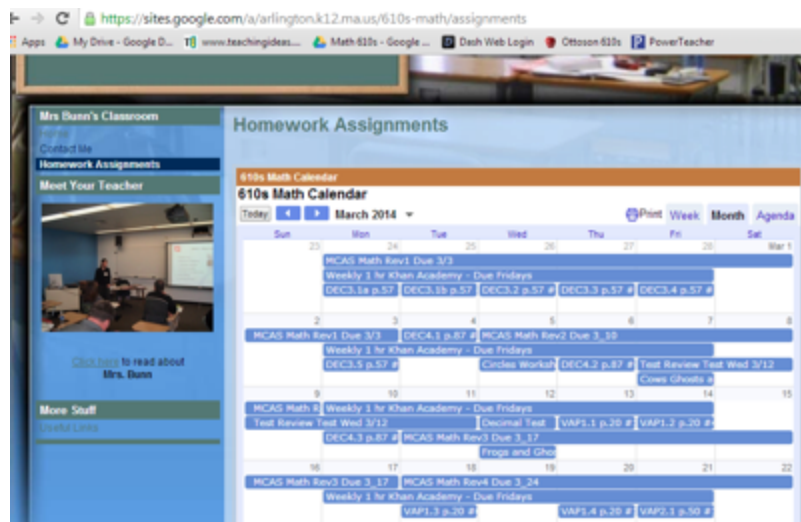


Some of my students were so excited about using Khan Academy to learn math that they used it beyond the amounts that I requested. These students were actually contacted by Khan Academy to tell their stories.

Additionally, with the iPads, students have been able to take advantage of the online CMP3 mathematics curriculum. This means that students always have access to the curriculum, even if they forget their books at home.



Lastly, the iPads have allowed me to share documentation and solutions through the online calendar. This means I am quickly able to alert students to any changes, and students always have access to the items they need. Students can come to class and immediately check the solutions to the problems they might have had difficulty at home. In essence, they are individualizing their learning. This also means that there is no excuse for not knowing the homework, or what is coming up and class. That information is always there.



I believe that the iPads have helped to contribute to the significant increase in students gains as measured by pre-test and post-test scores ( $p > 0.001$ ). This was calculated using a two-tailed  $t$ -test. The average growth rate between the beginning of the year mathematics pre-test and the end of the post-test was approximately 32%.

### **Additional Mathematics Projects**

The iPads also provided additional opportunities for students to show what they learned in different formats based on their individual learning styles. All students chose different media to present their data projects (posters, Excel on iPads, iMovie, Explain Everything, Google Presentation, written reports), so students could find the way to share their information that worked best for them. Also, as a culminating project for the year, students chose a math topic and create an instructional video to help future 6th graders using iMovie.

### **III. English Language Arts - Teacher Perspective (Jessica Keweshan)**

#### **Writing Process**

- Since every student is able to type a writing assignment, I have seen an increase in the amount of writing produced. Many students are better able to get their ideas on paper when they do not have to write by hand.
- I am able to provide graphic organizers electronically, and students are able to plan their writing electronically. This greatly streamlines the writing process, since students are not laboriously copying their notes in order to generate paragraphs. Instead, they can copy and paste quotations, move sections of text around to improve organization, and replace headings from their graphic organizers with transition phrases and topic sentences.
- Deciphering handwriting is no longer an issue, so I am able to give feedback more quickly and easily.
- No writing assignments go missing. Everything is available both at school and at home through Google Drive. Students' essays and rubrics are available for the entire year and can be easily saved for the rest of middle school and high school in Google Drive.
- Students have improved access to spell check (through autocorrect) and dictionaries.

#### **Multimedia Texts**

- Having iPads in the classroom has expanded my use of multimedia texts. For example, when studying the historical fiction novel *Elijah of Buxton*, students used different station activities to watch a documentary, listen to slave spirituals, and use a National Geographic interactive.
- Students also have more practice in generating multimedia texts through projects using Explain Everything or iMovie. Many students developed independent reading projects that involved music, video, or animation and were able to share the projects with the class using their iPads.

#### **Grading Assessments**

- Flubaroo allows quizzes to be returned (with answer key) as soon as all students have taken it. Students receive more timely feedback on their vocabulary and grammar quizzes.
- Using pre-assessments with Flubaroo made analyzing students' learning needs a quick and easy process. Identifying gaps became an instantaneous process, and I was able to focus more time on designing effective instruction and intervention.

#### **Differentiation**

- I was able to use Google Sites to develop station activities based on specific gaps in students' skills. I pulled together online quizzes and games based on different grammar and test-taking skills and also included my own activities by integrating Google Forms.

- Book Share through the Voice Dream and Read 2 Go apps provided resources to students who need the support of audiobooks (due to learning differences, concussions, or visual disabilities).
- The iPads also allowed me to provide large-print versions of handouts and texts for students with visual disabilities.
- I occasionally used the Dragon Dictation to support writing output for students who have difficulty with written expression.
- When students had difficulty with a topic or needed a review of a topic, I was able to direct them to online videos we had used in class or reference sheets posted in Google Drive.

### **App Use**

- Explain Everything: Students were able to create projects where they analyzed poems or compared/contrasted two versions of a myth, using visuals and animations to support their viewers' understanding.
- Notability: Students annotated texts and were able to share their comments easily with others.
- Google Drive: Google Drive has revolutionized my classroom. Moving towards a paperless classroom helps students with organization, makes both students and teachers more efficient, and is great for the environment.
- Prezi, Haiku Deck, and Google Presentation: While I did not explicitly teach the use of these apps, students often chose to demonstrate their knowledge using one of these presentation tools.



#### **IV. Social Studies - Teacher Perspective (Alison Sancinito)**

##### **Multimedia Texts**

- Having iPads in the classroom allowed me to use a variety of multimedia texts to nurture and to challenge all readers. In addition to using the online versions of textbooks, I was able to supplement lessons with readings from the New York Times and National Geographic. We used an online version of the UpFront Magazine to read cultural, economic, and historical articles. The app for the UpFront Magazine also included videos, interactive charts, and audio clips to help curious learners to expand on the information provided in the original text.

##### **Research Skills**

- The iPads allowed me to teach essential research skills to my students. Although research skills of this caliber are largely reserved for the upper grades, the iPads gave me the opportunity to establish a strong foundation for research skills that will certainly assist my students in future classes.
- All students established an Easy Bib account. They were required to create MLA Works Cited pages for every research assignment. In addition, most students were creating annotated bibliographies by the end of the school year. They were able to explain and defend their use of sources in their work.
- Students used collaborative graphic organizers to conduct group research. In the structured document, they learned to take notes by source, not by topic. They also consistently critiqued each other's sources in an effort to establish the highest quality sources of information.
- iPads allowed us to have regular scholarly conversations about how to research online. When asked to research at home, students often waste time exploring the Internet. I was able to show them how to conduct appropriate searches. We explored online databases. We were able to have regular conversations questing source reliability and bias. These conversations will aid the students in future research. They are conversations that need to happen in the classroom.

##### **Student Engagement**

- Students quickly learned of the abundance of information accessible because of the iPads. I would regularly conduct lessons where every student had to know the answer to a question. For example, while learning about the 3 branches of government, I asked the class a series of questions about the Supreme Court. Every student was able to conduct quick research to answer all of the questions. It was empowering for all learners to be able to participate and share ideas. The response of "I don't know" was eliminated from most lessons due to the iPads.
- Students enjoyed using the iPads to create projects and assignments that reflected their individual strengths. As a result of this interest in project making on the iPad, I was able to significantly raise the research and writing expectations on each assignment. For example, I consistently required parenthetical citations, annotated

bibliographies and primary source quotations in all projects. Below is a list of sample projects produced this year:

- iMovie puppet show on the trial of Socrates
- iMovie infomercial on Sumerian inventions
- Explain Everything on Roman spread of Christianity
- iMovie news broadcast on current events in the ancient world
- Prezi presentation on the influence of Greek architecture on modern day architecture

### **Time on Learning**

- The iPads allowed me to use class time more efficiently. Student work was submitted electronically. This allowed my students with organizational issues to produce work quickly without the shuffling of papers.
- Assignments, quizzes, readings, and presentations were all shared electronically. Every student could view these assignments and proceed at his or her own pace. This allowed me to provide extension activities for those who finished early, and it also gave me the opportunity to assist kids who required additional support.
- At times, I needed students to pay attention to my teaching rather than taking notes. At the end of this type of instruction, students could take photos of my notes on the boards or visuals used in my lesson. They could also video tape my lesson in order to review the lesson at a later date.
- As a result of this technology, I was three weeks ahead on my curriculum map. I was able to supplement lessons with additional research skills and current events.

### **Collaboration**

- Students used iPads to collaborate with their peers. They used shared note-takers and graphic organizers. When working together on an assignment, they would use the Google Drive App to create timelines, note-takers, and goal sheets. Every student was able to add his or her ideas. Again, this type of organization is difficult for students to achieve at home without teacher support and structure.
- Students also used a shared “610’s Strategies for Success” folder to share strategies for studying, organization, and note-taking. Below is a sample of a collaborative Google Doc on study strategies:

Close

## Study Strategies

Edit

How do you prepare for tests and quizzes? Add your ideas to this shared document. Your strategies could help your peers!

Your Name	Strategy	Materials Needed	What is it helpful for?
Emilia M.	Have your parents quiz you.	Your notes with answers, and your parents.	This is helpful for learning key terms and other things. It also helps you with finding out which things you need to study a bit more than the others.
Mark G	Have your friend from your class or parents test you on the information. Also making flashcards helps me a lot	your notes, flashcards(if you want), and your friend or parents.	It is helpful because if you are working with your friends they might have something that you don't that probably will be important.
Sarah K	Organize your notes and make a "master" note sheet with a basic outline of all the key information.	All notes taken in class, highlighter (optional)	This helps with keeping most of the key information and terms together in one place. Rewriting all of the important notes also helps with memorization because writing information over again refreshes your memory and helps fix it in your head.
Sarah K	Don't have many colorful objects, loose sheets of paper, or loud noises in the general area you work in.	Your homework	This helps because having many distractions in your workspace can easily sidetrack you into not doing homework. Remember that once you are done with your homework you can go play, listen to loud and distracting noises, talk to other people, and doodle.
Quinn K	Studying separate parts of one subject each time you study.	Your notes.	I think this is helpful because I find it easier to focus about one thing rather than everything. For me it also helps me get involved with it. It makes me really think about what i'm studying & makes me enjoy it.
Quinn K	Talk to a friend/parent.	A friend/parent.	I like this strategy because it helps me express all my ideas. If I don't express my ideas and share them with other people I usually forget them. It also allows you to hear other people's ideas on the subject. I also think better and think through my thoughts when i'm talking out loud.
Mitchell .F	Use highlighted terms in textbook as a base for word list	Textbook, Word sheet ( Pencil/Paper or Digital)	Quickly making first drafts of vocab lists.

## V. Science - Teacher Perspective (Julie Gallagher)

In science, students used their ipads on a daily basis. Teacher presentations, notes, videos, worksheets and assignments were all shared with the students. Students could access lessons missed due to absence or simply for review for tests. Student access to the curriculum was dramatically increased through the use of the ipads. The students were engaged and excited to use the technology. The ipads were completely integrated into the curriculum as a means to differentiate the material thus increasing student comprehension of the content.

- Student Presentations
  - In groups students presented one human body system. They used an assortment of **apps**, such as Prezi, Noteability, Google Presentation, imovie, and Explain Everything.
  - They had their fellow students take notes on their respective iPads or **explore** interactive websites on a topic.
- Student Exploration
  - Using their iPads, students were able to access **extension work**, **conduct research**, and **explore visual models** on specific scientific topics.
  - Students **reviewed** material together by creating **Google Forms** and sending them to their friends to take as a **study tool**.
  - worksheets were uploaded and shared with students.
  - a list of relevant websites were shared with the students that provided more in depth information than a text book.
  - the students could take pictures and video during experiments to accurately depict the process and results.
- Student Writing
  - Notes were easily found in Drive or Noteability and the focus could be on how to take **organized notes** versus just legibility.
  - **Lab reports** could be typed **immediately** and edited easily.
  - Students wrote their scientific conclusions using their google drive
  - The students could input their data directly into a shared spreadsheet and the students could then analyze the entire clusters results.
- Assessments
  - Students took assessments using google forms. Test results were emailed to the students the day of the exam for immediate feedback and review.
  - Students used various sites to create flashcards for the vocabulary to prepare for the assessments
  - Students were also able to create their own assessments using google forms.

## **VI. Special Education - Teacher Perspective (Lillian O'Donnell)**

Students with disabilities, specifically learning disabilities in this case, greatly benefited from the iPad pilot.

### **Differentiation**

- Within the general education class, teachers can use the iPads to adjust assignments and lessons based on skill attainment, learning needs, or interest levels. These groups can be both homogenous or heterogeneous, or it can be a completely individualized process.
- A high level of differentiation is possible within my academic support class to have students working on their IEP goals, vocabulary building, reading, etc.

### **Modalities of Learning**

- Using the iPad, many modalities of learning are available. There is video, text, blurbs, interactive text, educational games, and more.
- The iPad is tactile, it's able to be personalized, and it requires engagement through touch.
- The iPads open so many opportunities for project-based learning with apps such as Explain Everything, Prezi, Haiku Deck, iMovie, and Google Presentation. Technology is another language for students, they are adept at picking it up quickly, and they enjoy expressing what they've learned through the medium.

### **Engagement/Interest**

- I've found an increased interest in learning with the iPad, particularly with my students with attentional issues and learning issues. They are engaged, they are following along, and they are searching for answers.
- Students are voluntarily seeking out information they don't know. When they come across a word in the text they don't know, students will Google it. When there is an aspect of the history curriculum he or she is interested in, suddenly I find them reading history.com during down time. These were behaviors I previously was generally not used to seeing with some of my students.

### **Accessibility of Text**

- Text is suddenly always at their fingertips and ears. Higher level texts are more accessible. I can upload audio to Google Drive and share it with the students. They listen with headphones on their iPads at their own pace, pausing as needed.
- I was able to get Voice Dream licenses for my students with text disabilities. They can download almost any book from Book Share and have the app read it aloud at the speed they choose while the word is illuminated. Students learn how to pronounce words and practice all their reading skills--comprehension, fluency, and decoding.

- Within VoiceDream students changed background color, font size and color, etc. to meet their particular needs. Voice Dream can read aloud anything on Google Drive, making group projects easier. Webpages can be read aloud while highlighted.
- Open Dyslexia font with weighted letters is useful for many dyslexic students and can be used through Voice Dream or the Open Dyslexia browser that translates all websites into the font.

### **Written Production**

- DragonGo is a text to speech program similar to the one built into the iPad that enables students to speak their thoughts and have it translated into words. Although not completely accurate, it helps students who have difficulty translating their thoughts into writing and who get stuck in the brainstorming stages. Editing is necessary, but it can help the most reluctant writers.
- Written output is so much higher when students type. They can do so faster. Many of my students have physical difficulty writing and have challenging handwriting to read. With the iPad, they wrote more and it was always saved in Google Drive.

### **Organization**

- Students with executive functioning problems lose things--papers, especially. Google Drive made this better last year when students had Google based email, but it improved so much more with the iPads because student digital literacy was so much higher. Before it was only the students who spent a great deal of time online who could tackle Drive, but with the iPads, it became everyone. Students with no computers at home could create, share, collaborate, and do it all with Drive. No one was losing paper and everyone was closer to being on an equal playing field.
- Everything is "findable", which cuts down on my time as a teacher clawing through binders and which allows students to focus more on the academic piece.

### **Accommodations**

- Fulfilling IEP accommodations are easier with the 1-1 iPad pilot. I can easily share copies of notes online so they can bring them up at any point through the day or at home. I generally give a print out, too, so they have different opportunities to access it.
- Students can highlight text on the iPads and copy and paste information to put into their writing.
- With Notability, students can interact with the text by inserting pictures or writing in the margins.
- Many IEPs call for directions given in many modalities, which we now do through written directions (in emails, shared docs) and spoken directions.

- Online checklists and reference sheets can easily be sent and shared as documents or Google Forms.

### **Data Collection**

- For a special education teacher, there is a large emphasis on gathering data, particularly frequency data. Google forms makes this something easily tracked, organized, and stored. Having a teacher iPad means I am able to do this on the go, rather than having to do so later and be likely to forget or misplace papers.
- Emailing students questions becomes easier and they are more likely to communicate back. I can collect this information to save time later and focus on lessons.

## **VII. Student Perspectives: The Numbers**

We administered a [student survey](#) regarding the effect that the iPad pilot has had on their learning and feelings about school this year. 110 students responded.

**98% of 610s students said the 1:1 iPad program had a positive impact on their academic experience this year.**

**95% of students said the iPads improved their research skills.**

**79% of students said the iPads increased their overall interest in learning.**

**76% of students said the iPads improved their overall engagement.**

**76% of students said the iPads improved their ability to evaluate sources of information.**

**73% of students said the iPads improved their organization.**

**70% of students felt the iPads helped increase their creativity.**

**60% of students said their writing production increased due to the iPads.**

**57% of students said the iPads improved their computer and digital literacy and citizenship.**

**45% of students felt the iPads demonstrated their individual strengths.**

**45% of students said the iPads increased their math abilities, particularly through Khan Academy.**

**36% of students said the iPads provided additional academic supports.**

**8% of students cited other effects of the iPads.**

**75% of students think learning will be more difficult next year without the iPads.**

## **VII. Student Perspectives: The Comments**

### **Research**

"It has had the most impact for me in history class. Now I know how to accurately research a topic and how to find sources to do that. As well as it opened up new project options which I really enjoyed." - Dan R.

"In history, with the iPads, we learned how to find credible sources and how to create annotated bibliographies with EasyBib on the iPads. In math, my math skills increased with Khan Academy. We could look up questions we had in science." - Grant G.

"If we are in the middle of class and a question comes up we can quickly look it up on our iPads. Like yesterday in history we were talking about Pompeii and we were wondering how fast lava travels so we were able to look it up." - Nikita S.



“Also when you have an ipad in class you learn to be more independent and research your own questions (Ms.Gallagher). The ipads also help with your researching and computer skills.” - Molly H.

### **Learning Styles**

“It has made me learn Science easier because I saw diagrams of the material.” - Mark T.

“The common assessments for ELA. I don't always write all of my ideas down on paper but with the iPad I was able to write all of my ideas.” - Quinn K.

“I didn't enjoy handwriting, and much preferred to type things, and also I have more enjoyed making presentations because I am able to work more freely on certain apps.” - Kate O.

“It made me want to share what I think about something, or contribute to some shared Google docs.” - Audrey J.

### **Responsibility and Leadership**

“We have learned new skills as we have had these iPads. We have learned how to choose right sources for information and we learned responsibility like where you leave your iPad, charge it before you leave and so on.” - Ryan D.

### **Organization and Time Management**

“The pilot impacted my learning because I could take notes on google docs and have them at home, and I would not risk losing the papers. Also, it allowed us to look up things we were confused about, without having to bug the teacher. What was really great, though, was that if we were done with something in one class, we could work on another thing from another class on google drive.” - Juliet S.

“Instead of having a binder stuffed to the brim with notes to organize I just had a folder in google drive to organize and sort through.” - Eileen T.

“Whenever I have an in-class assignment, I can do it on Google Drive and access it from home, or I can do it in Notability and email it to myself.” - Ella S.

### **Projects and Creativity**

“I enjoy school projects much more because there are so many different ways to make projects.

It helps me find answers to some of the teachers' questions by looking them up on the internet, and there is never any reason not to know the answer.” - Emilia M.

“The iPads have allowed me to use my creativity to show the class presentations that would not be possible without apps such as Explain Everything and Prezi, like the breakdown of the

poem "Did I Miss Anything?" that Avril and I did in English class using different slides to explain different aspects of the poems in new ways." - Chiara R.

### **Focus and Engagement**

"The iPads made it easier for me to be more engaged in classes. I used to not pay as much attention to what the teacher was doing on the projector (on the computer: i.e. the site we would use in class) but the iPads made it easier to focus on what was happening in class because you would be following along and doing the same thing that the teacher is." - Alina K.

"When I'm taking notes it's more fun on notability than on paper and it gets me more excited to take notes." - Riley B.

"Over the course of this year, the iPads have improved my note taking abilities and my school work overall. The way the iPads let me access many sources and display them in many formats has gotten me more engaged in my school work and made me feel more passionate about the work I'm producing. I hope that you will decide to continue and expand the iPad program to all the grades and clusters so that all students can have the opportunity to produce better work, learn about topics that interest them, and feel prepared when technology becomes a larger part of their educational experience in the future." - Audrey S.

### **Math Skills**

"Using the iPad, I have been able to practice math whenever I have the time, I have so far reached 100% mastery in 6th grade." - Mitchell F.

"The iPads introduced me to khan academy, and now I do things like trigonometry, drawing parabolas to match an equation, simplifying and adding radicals, and using the Pythagorean theorem in the distance formula on a coordinate grid." - Thomas I.

### **Technical Issues**

A few students did voice concerns about certain issues with the iPads, primarily:

- apps not loading
- wifi connectivity issues
- some preference for pencil-and-paper tests

We recommend providing additional paper copies of tests to students (even if answers need to be transferred electronically). We hope that as time goes on and as these programs expand, Ottoson's network can also expand to better meet the needs of a 1:1 iPad program.

### **VIII. Parent Perspectives: The Numbers**

We administered a [parent survey](#) regarding the effect that the iPad pilot has had on their children's learning this year. 85 parents (of the 114 families of 610s students) responded.

**98% respondents said the 1:1 iPad program had a positive impact on their children's academic experience this year.**

**84%** of parents said the iPads increased their students' **overall interest in learning** (71/85).

**78%** of parents said the iPads improved their students' **research skills** (66/85).

**66%** of parents said the iPads improved their students' **overall engagement** (56/85).

**64%** of parents said the iPads improved their students' **computer and digital literacy and citizenship** (54/85).

**61%** of parents said the iPads improved their students' **ability to evaluate sources of information** (52/85).

**49%** of parents said the iPads increased their students' **math abilities**, particularly through Khan Academy (42/85).

**47%** of parents felt the iPads helped increase their students' **creativity** (40/85).

**45%** of parents said the iPads improved their students' **organization** (38/85).

**34%** of parents said the iPads provided **additional academic supports** for their children (29/85).

**33%** of parents felt the iPads demonstrated students' **individual strengths** (28/85).

**26%** of parents said their students' **writing production increased** due to the iPads (22/85).

**20%** of parents cited **other effects** of the iPads (17/85).

**92% of respondents would like to see the 1:1 iPad program expand to other clusters and grade levels.**

## **VIII. Parent Perspectives: The Comments**

### **Research Skills**

“Engaged in more expansive research for projects because of accessibility during school hours; gained better understanding and comfort of resources available online.”

“My son uses his iPad daily for almost everything school related and it has been incredibly helpful to him. He does research, creates videos for classwork assignments, completes work on google drive, does the Khan Academy - it has been a very valuable tool. He has his own which provides access to his email and the school websites as well.”

“Greater comfort and confidence in using mobile devices for research and academic activities (not just watching videos, playing games, and using art apps, which were her go-to iPad activities before). With online activity and overall computing time swinging so sharply away from laptops and desktops and to mobile devices worldwide, I feel it's essential to get students facile with mobile devices as learning and organizational tools.”

“I think it had really helped the kids to do more research on any given topic and learn more on their own outside the curriculum.”

### **Leadership Opportunities**

“My Daughter is on the iPad council and I know she really enjoyed the visit to the conference and speaking in front of the crowd. She enjoys technology and helping other people learn. I believe it helps as an additional medium in the classroom.”

“Our kids understood that this was a pilot program and were both very engaged (and really enjoyed) being included in the learning process that both the teachers and the students went through. during the year. I would compliment not only how the tool was used in the classroom, but overall, how the kids were made to feel like they were partners in the process.”

### **Learning Styles**

“I really appreciated that the students were given a choice of projects outputs (Presi's, Powerpoint, Posters) . The electronic formats were very helpful for my son as organizing his thoughts in written form is something he struggles with, The Ipads were very helpful in allowing him to become proficient in using the electronic formats to organize his thoughts much more effectively.”

### **Digital Citizenship and Technical Skills**

“Exposure to beginning to understand the immediacy with which information becomes available and is sharable, which will help young teens better understand what it means to press "Send" and how permanent that decision is--and how far reaching...which will hopefully translate into better decisions around sharing through social media tools!”

"[My student] has always been skilled with computers but I have been amazed at his facility using and sharing information via google docs and his ability to look up and use information. When he was working on his Math project he very easily incorporated video that he took on his iPad with video recorded on his home webcam. What he has learned on the school iPads is transferring to the way he uses his own iPad at home for homework. The iPads have also made him so much more excited about school and motivated him to be more engaged in his work. He felt so lucky to be in the 610s and we are grateful he had a chance to be a part of this pilot."

"We saw a huge increase in our children's digital literacy and ability to use tools such as Presi, Powerpoint, Google docs along with other learning tools that they will need to continue to use as they advance academically. There were multiple times that they would come home and demonstrate their capabilities, using online resources or the tools above explaining the tips and tricks they had picked up while using their Ipads in class."

### **Organization and Time Management**

"My son was able to get right to work on research for class projects because he had started the research in school. He is developing his understanding of good, reliable websites. He was able to begin written assignments when it was convenient rather than have to wait his turn for a chance to use the computer that is shared by many others. This made writing easier for him to go at his own pace (not feeling pressure to work quickly) and feel more successful. Having his own ipad to use in school seemed to empower my son to become an active and engaged learner."

"It helped with organizing work, made researching multiple topics easier, and enabled deeper research into selected subjects."

"Since all writing was done on the iPads, it helped with organization since everything was in Google Drive folders. Research is easily accessible. iPads also helped with projects since there are so many project apps available."

"My daughter was able to complete so much more while in class on the iPad. It makes the tasks completion easier and intuitive. It develops the computer skills so needed today!"

"The ability to have a mobile tool such as an IPAD allows them to access the information they need, when they need it enabling them to work on projects, classwork, homework much more efficiently."

"My son is more engaged and more focused with the iPad because it is quick and efficient."

### **Engagement and Collaboration**

“My son has enjoyed making the movies and doing the creative activities that enhanced his learning of the subject matter.”

“He seemed happy to be doing schoolwork on an iPad. It was nice for me to see him using a computer for school work and not just for games. I think the kids start to teach us more about computers, and I like that they are incorporated into classroom teaching.”

“It has really enabled collaborative work. My daughter has been able to easily share documents and to email back and forth during school. It has also really engaged her creativity. She's made multiple very creative, imaginative movies. We've been really happy and feel lucky that she was involved in this pilot.”

“Collaborative project work, researching skills for projects, ease of putting information together for projects, keeping my child's engagement for projects and homework in subjects that may not be their favorite, increased personal confidence from pride in the final project, increased competitive skills that will be needed in the future for school and eventually for work, and increased creativity when approaching a project.”

“The iPad allowed our son to work with peers in producing multimedia such as presentations and videos. Both the technology skills and the enhanced motivation were worthwhile.”

**Parents were given the option of including suggestions for expanding technology at Ottoson. Some responses included:**

- **expand access** to the iPads - allow students to use the iPads all day and/or bring them home, use the iPads all around the school
- access to e-books and **digital textbooks**
- teach **keyboarding skills** to all students
- explore the “**flipped classroom**” modality
- continue and deepen lessons on **digital citizenship**
- provide opportunities for **professional development** for teachers
- explore the possibility of a yearly **technology fee**

## **IX. 610s Teachers' Goals for the Future**

We are committed to developing our own skills in using the iPads as a teaching and learning tool in our classrooms.

### **Recent Professional Development**

- Alison Sancinito, Lillian O'Donnell, Johanna Bunn, and Jessica Keweshan attended the EdTechTeacher iPad Summit in Boston, MA, in November 2013.
- Lillian O'Donnell also attended the EdTechTeam Cambridge Summit Featuring Google for Education in April 2014.
- Alison Sancinito and Lillian O'Donnell also led the dedicated group of students who make up the iPad Council in presenting at a Tech Fair in Newton in April and before the Arlington School Committee.

### **Future Endeavors**

- We plan to expand the channels of home-school communication next year, providing parents with more opportunities to view and admire students' projects and writing produced with the iPads. We will leverage the cluster website and the cluster YouTube channel to facilitate sharing with families.
- We plan to develop a comprehensive and consistent organizational system for students using the iPads, since the next group of students will be able to begin using them at the start of the school year.
- We plan to explore the option of creating digital portfolios of student work that students can publish online and add to as they continue through the Arlington Public Schools.



## Town of Arlington, Massachusetts

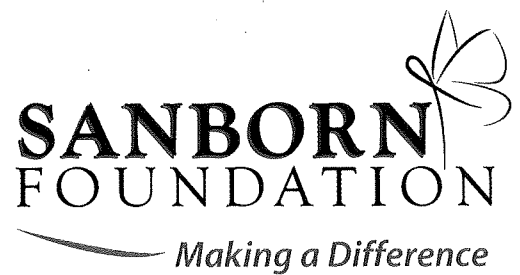
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7:20 p.m. Sanborn Foundation Update, E. Smith-Devile, L. August

### ATTACHMENTS:

Type	Description
 Backup Material	Sanborn donation letter





March 20, 2015

Cindy Bouvier, Director  
Health, Wellness, and Counseling  
Arlington Public Schools  
869 Massachusetts Avenue  
Arlington, MA 02476-4701

Dear Ms. Bouvier:

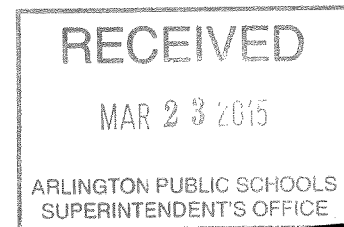
At their meeting held on March 17<sup>th</sup> the Sanborn Foundation Board approved your request to fund Arlington Public School's K-12 ANTI-TOBACCO EDUCATION CURRICULUM for the next academic year. A check for the \$35,000 that you requested will be delivered to the School Department's business office in early September 2015.

The Sanborn directors believe this program is extremely valuable and worthy of support. The Foundation is pleased to help you carry out this important work on behalf of our youth and community.

As usual, the Board asks you to provide periodic updates on the program activities and a final evaluation at the end of the grant period. We look forward to hearing from you on this endeavor. Please do not hesitate to call me if you have any questions.

Very truly yours,

Evelyn Smith DeMille, MS, MPH, LICSW  
Executive Administrator



cc: K Bodie

Sanborn Foundation  
P.O. Box 417  
Arlington, MA 02476

781.643.7775  
[www.SanbornFoundation.org](http://www.SanbornFoundation.org)



## **Town of Arlington, Massachusetts**

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**7:45 p.m. School Committee letter to Foundation Budget Review Commisson**

### **ATTACHMENTS:**

Type	Description
 Backup Material	final Foundation Letter

## **To the Foundation Budget Review Commission:**

Thank you for your time and attention today. We greatly appreciate the efforts of the Foundation Budget Review Commission to clarify what is needed to fund the high educational expectations that are required for success in our current economic climate and that are now mandated by our state regulations. We feel the current Foundation Budget calculations greatly underestimate the costs of educating today's students. A comparative analysis of our local spending and Foundation Budget supports this conclusion. Specifically, we request: adjustments to accommodate higher than average out-of-district placement costs, increases in funding for Special Education for both in- and out-of-district students, increases in funding of pupil services to cover nurses, social workers and psychologists required to work with the rising levels of challenges in today's student population, increases to fund mandated requirements, and changes to the wage adjustment factor calculations, to better reflect the entire local market.

## **About Arlington**

Arlington is a town of 43,000 people in the Greater Boston area. Arlington Public Schools enrollment has burgeoned over the past 5 years, increasing 9.1% since 2011. This growth shows no sign of stopping. Although Arlington has spent more than 40% in excess of Foundation Budget for many years, APS spends significantly less per pupil than the state average (\$12,533 vs. state \$13,999 in FY13) and also much less than a set of twelve towns (T12) locally selected as a basket of communities economically and demographically most similar to Arlington (\$12,533 vs. \$13,505 T12 average in FY13).

The primary source of education funding is the town: out of a total FY13 budget of \$63.9 million, only \$8.1 million was received in Chapter 70 aid. Arlington is densely populated and has very little commercial business, thus almost all its tax revenue (94%) is derived from residential property taxes. Providing the resources for the type of education parents expect and the state education department requires has become a burden disproportionately borne by the local communities. The Foundation Budget has not kept pace with the unfunded mandates, nor the more extensive needs of today's students.

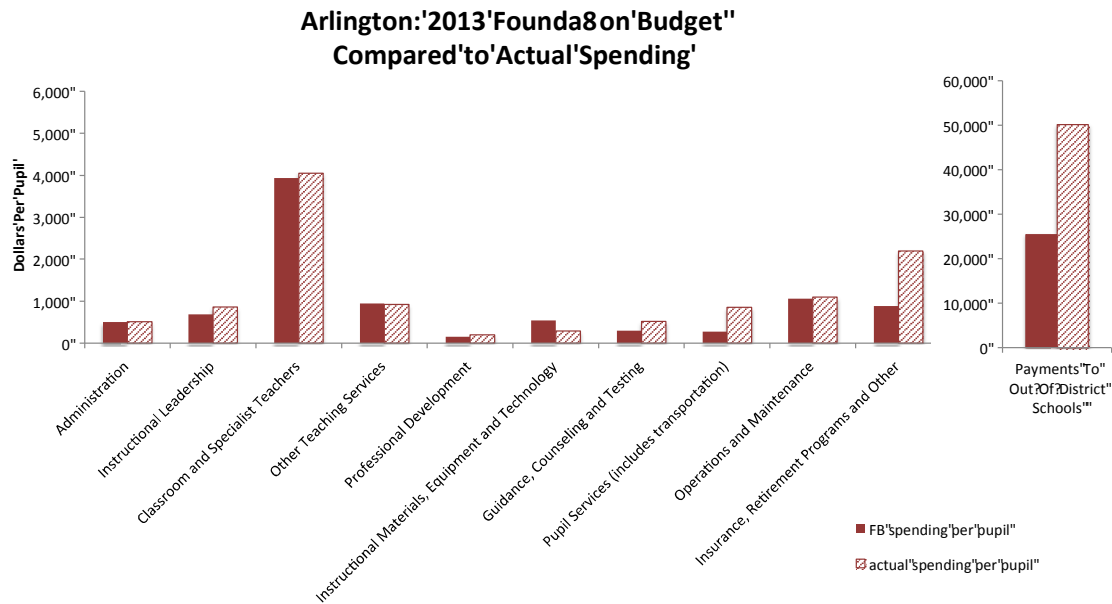
Today, any increases in Arlington's total Foundation Budget, for example from increased enrollment, directly translate into more Chapter 70 aid to our town. But at the same time, any additional dollars needed but unaccounted for by Foundation Budget must be raised by local taxes.

We also have concerns about the Chapter 70 calculations, because they do not take into account several important factors, such as a town's land available for development, availability of non-property tax revenue, actual per household income, etc. However, we understand that the charge of the Commission is to look at the Foundation Budget formula. We thus limit our discussion to this topic. Additionally, while we, too, see significant shortfalls in funding of health and other

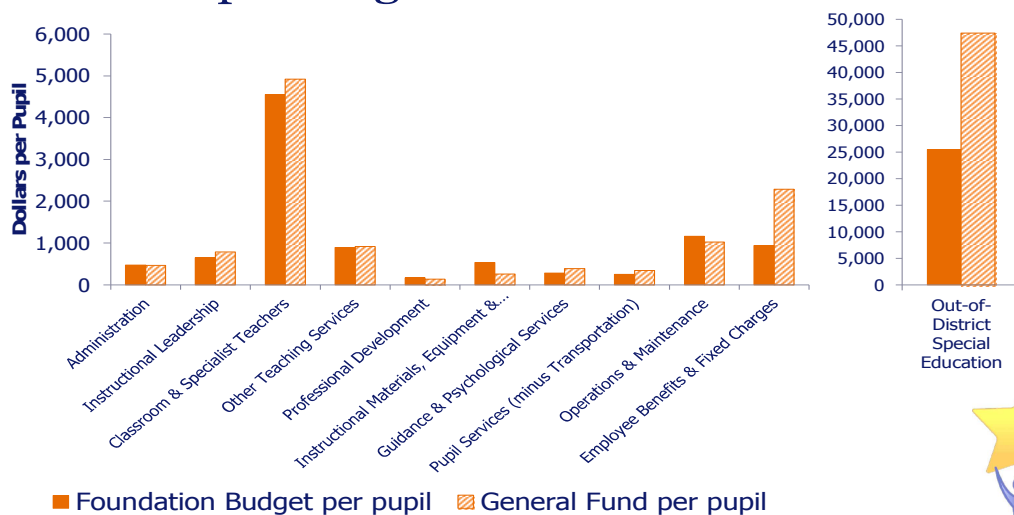
benefits, we know this is well recognized and do not focus on it here.

## Analysis of Arlington Spending

When APS spending is analyzed in the manner presented to you by DESE, it is similar to the than the averages seen statewide:



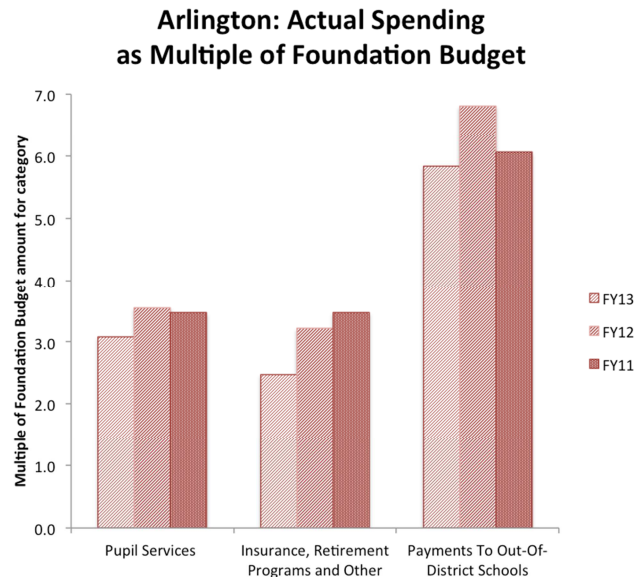
## 2013 Foundation Budget Compared to Actual Spending



[Graph clipped from DESE presentation to FBRC, 3/10/15]



But this type of analysis hides much budgetary pain. For many years Arlington's special education out-of-district total costs have greatly exceeded the Foundation Budget's expectation — averaging over 6 times the Foundation Budget amount. Pupil Services and Insurance and Retirement Programs have also run well over Foundation Budget expectations at approximately three times the allocation.



And these differences add up. In FY2013, APS spent an additional \$17.6 million over Foundation Budget in six categories, money *beyond* the \$31.7 million dictated for these areas. This included \$1.4 million for Instructional Leadership & Classroom and Specialist Teachers combined, \$1.1 million for Guidance, Counseling and Testing, \$2.9 million for Pupil Services, \$6.5 million for Insurance, Retirement Programs and Other, and \$5.8 million for Payments To Out-Of-District Schools, all amounts *beyond* Foundation Budget estimates.

Keeping in mind that Arlington spends well below the state average in per pupil costs, a picture begins to clearly emerge: the Foundation Budget does not account for adequate funding of a Massachusetts education.

### **Cutting Costs, Increasing Fees**

Arlington has made myriad cost cutting efforts over the years. We joined the GIC in 2011 - effective in 2012. We participate in a collaborative to decrease special education transportation costs and have increased interventions to help struggling students before they are referred for Special Education assessment. Our athletic fees are some of the highest in the area, but necessary in order to maintain an athletic program. “Extras” at the elementary school level like certified librarians, foreign language instruction or free musical instrument instruction are long gone. We have raised class sizes at all levels. In some budget years, we have had to decrease the diversity of high school offerings and increase the number of directed studies to trim expenses and balance the budget.

## **Rising Social-Emotional & Health Needs of Today's Students**

Each year we are seeing more children with significant health and/or social and emotional issues. To address the increasing social, emotional and health needs of our students we have added support staff such as social workers, nurses and psychologists. This has been the main area of increase in our budget over the past few years. Our principals and teachers list these support staff as their number one priority. Keeping these students in school and on track for learning requires additional resources not adequately reflected in the Foundation Budget.

These professionals are a necessary part of adequately meeting the needs of today's students and should be factored more heavily into the Foundation Budget.

## **Special Education Costs - Appropriately Serving Our Most Challenged Students** □

We appreciate that DESE brought the costs of Special Education across the state to your attention in their presentation on 3/10/15. We, too, see significant imbalances here. The easiest number to identify is out-of-district (OOD) tuition. In Arlington, for at least the past several years, our OOD costs have exceeded Foundation Budget estimates each year by over 500%. Between FY11 and FY13, we spent an average of \$6.7 million dollars each year in OOD tuition costs, vs. the Foundation Budget estimate of \$1.1 million. Special education circuit breaker does not offset these costs in a meaningful way – average reimbursement for this period was only \$1.5 million annually. Comparing our numbers to the state, we have a higher percentage of students in out-of-district placements. We have more students who require out-of-district placement, and at a higher cost. Nowhere in the Foundation Budget formula does accounting exist for a higher than average occurrence of highest need students.

## **Unfunded Mandates and Increasing Standards**

Every new initiative has a cost in terms of time and resources for professional development, or staff to carry out the mandate. Some mandates cost districts significant amounts to implement and to maintain once implemented. Examples include the introduction of the Common Core curriculum, the new Educator Evaluation system, the increasing requirements for English language acquisition instruction for English Language Learners (students speaking English as a second language), and the continued push to decrease the achievement gap for high needs students.

Adoption of the Massachusetts Common Core State Standards meant each district had to review all curricula, determine where additions and substitutions were necessary, and create and purchase new materials to fill gaps. Much additional training and professional development were required to introduce the new frameworks and instructional techniques. Furthermore, the requirement in

the Common Core to fully integrate technology translates into much larger budgets for technology as well as IT and instructional technology support.

The new evaluation system has pushed districts to spend more money on administration, whether they are curriculum leaders or building based administrators, in order to fulfill the many evaluation components. Districts require adequate staffing to ensure that all educators are observed, coached, and supported in a constant improvement cycle. In addition, the state education department, in an effort to close the achievement gap, is now *requiring* levels of service for ELL learners that were formerly *recommended*. This means more ELL teachers must be hired to meet the standard.

Together, these mandates add hundreds of thousands of required dollars to budgets both past and future. Yet there has been no adjustment in the Foundation Budget for any of them.

The final area of unfunded mandates is found in the Race to the Top waiver. While closing the achievement gap is a laudable goal, the requirement to continue moving forward at a prescribed pace to close the achievement gap has necessitated increases to the school budgets to help the most struggling students in the high needs groups meet the academic achievement of their non-high needs peer group. Students who come from higher poverty backgrounds, who do not speak English as their native language, and/or who have learning disabilities, require a much higher level of support than students without those challenges. As the testing bar rises, even more resources are required for these students. To continually increase the number of students in the high needs groups who score proficient and above on the state tests in math, science, and English language arts each and every year requires additional resources not currently provided by the Foundation Budget calculations.

### **The Wage Adjustment Factor**

The final area to which we would like to draw your attention is the wage adjustment factor. It can be found on the lower left corner of each district's Foundation Budget worksheet and is applied to all Foundation Budget categories except instructional equipment, employee benefits and special education tuition. The wage adjustment factor is more weighted toward the region's average wage, but still uses a town's average wage at a proportion of 20%. If, like Arlington, the local economy largely consists of restaurants and small businesses, the resulting lower average local wage drops the wage adjustment factor down from 1.058 to 1.030. This 'minor' difference of 2.8 percentiles diminishes Arlington's Foundation Budget by over a million dollars.

Our teachers come from all over the greater Boston area and are subject to the cost of living and other economic factors in this larger region. The regional economic trends are a more accurate indicator than the extremely local prevailing wage in a given town. The wage adjustment factor is supposed to be

controlling for market forces. To say that our teacher wages are pegged to the wage of the prevailing industry in town does not capture the relevant wage factor for our community. Teachers are subject to the cost of living in the region where they work and live, and the competitive wages in their career field. The wage adjustment formula should be altered to solely utilize the region's average wage in calculating the wage adjustment factor, eliminating the local average wage portion.

## **Conclusion**

Fully educating *all* children in the Common Core era and adequately preparing them for a productive life is an important and ambitious goal. Many aspects of recent state and federal reforms have raised the bar for districts and brought about positive changes for students. However, local communities have been left to absorb the lion's share of the cost for these new initiatives. State funding for special education has not kept pace with the costs of appropriately educating students with complex needs. The mandates for higher levels of service have not been accompanied by the necessary increases to fund the implementation of those services and programs. A comparative analysis of our local spending and Foundation Budget supports this conclusion.

We hope the Foundation Budget Review Commission will take a close look at the actual cost of educating today's students to the standards the state has set. We specifically request a close analysis of the calculations for in-district and out-of-district Special Education costs, increases in funding of pupil services to cover nurses, social workers and psychologists required to work with the rising levels of challenges in today's student population, and increases to fund new state mandated requirements. Finally, we request you review and rethink the way the wage adjustment factor is calculated, to more fairly and accurately reflect the actual market for each community. Massachusetts is a state that prides itself on its national reputation for great schools and a strong educational system. Please help communities achieve our common educational goals with state financing that matches our ambitions.





## Town of Arlington, Massachusetts

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### 7:50 p.m. Statement of Interest Arlington High School

#### Summary:

- Vote to approve the AHS Statement of Interest

#### ATTACHMENTS:

Type	Description
Backup Material	DIRECTIONS FOR MSBA VOTE
Document for Approval	SC VOTE MSBA LANGUAGE FOR SOI AHS 3 26 2015
Document for Approval	Statement of Interest AHS 3 23 2015
Reference Material	CFO memo to MSBA 3 18 2015 on SOI AHS
Reference Material	District Enrollment data through FY 20
Reference Material	District Enrollment data through FY 29
Report	HMFH Architects, Inc. AHS Analysis of Programmatic Needs
Report	AHS On site Insight GCNA report 8 2013
Reference Material	AHS Diagram Boards
Report	NEASC report 12 2012

Directions for MSBA vote requirements

Vote according to specific language (see additional document)

School Committee will provide minutes of the meeting where the vote took place, signed by the School Committee Chair.

Town Clerk will provide a certified copy of the Select board vote. The certification must contain the full language of the vote.

Once all documents are gathered, the Superintendent, Town Manager and Chair of the School Committee will sign the hard copy of the SOI in all places (page 4 and page 44).

Deadline for submission is April 10.

Any questions, please email [djohnson@arlington.k12.ma.us](mailto:djohnson@arlington.k12.ma.us)

Thanks!

Resolved: Having convened in an open meeting on March 26, 2015, prior to the closing date, the School Committee of Arlington, in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated on or before April 10, 2015 for the Arlington High School located at 869 Massachusetts Avenue, Arlington, Massachusetts, which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future.

3. Prevention of the loss of accreditation due to the poor state of the facility.
4. Prevention of severe overcrowding expected to result from increased enrollments currently being experienced at the elementary and middle school levels.
5. Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility as is consistent with a complex of buildings whose last major renovation took place more than thirty years ago.
7. Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements as needed to bring a structure, sections of which are not less than thirty years and some sections as much as one hundred years old, up to modern educational standards of safety, security and comfort;

and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the Town to filing an application for funding with the Massachusetts School Building Authority.

# Massachusetts School Building Authority

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## Next Steps to Finalize Submission of your FY 2015 Statement of Interest

Thank you for submitting your FY 2015 Statement of Interest (SOI) to the MSBA electronically. **Please note, the District's submission is not yet complete.** The District is required to print and mail a hard copy of the SOI to the MSBA along with the required supporting documentation, which is described below.

Each SOI has two Certification pages that must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer\*. Please make sure that **both** certifications contained in the SOI have been signed and dated by each of the specified parties and that the hardcopy SOI is submitted to the MSBA with **original signatures**.

### **SIGNATURES: Each SOI has two (2) Certification pages that must be signed by the District.**

In some Districts, two of the required signatures may be that of the same person. If this is the case, please have that person sign in both locations. Please do not leave any of the signature lines blank or submit photocopied signatures, as your SOI will be incomplete.

*\*Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated as the chief executive office under the provisions of a local charter.*

**VOTES: Each SOI must be submitted with the proper vote documentation.** This means that (1) the required governing bodies have voted to submit each SOI, (2) the specific vote language required by the MSBA has been used, and (3) the District has submitted a record of the vote in the format required by the MSBA.

- ▮ **School Committee Vote:** Submittal of all SOIs must be approved by a vote of the School Committee.
  - ▮ For documentation of the vote of the School Committee, Minutes of the School Committee meeting at which the vote was taken must be submitted with the original signature of the Committee Chairperson. The Minutes must contain the actual text of the vote taken which should be substantially the same as the MSBA's SOI vote language.
- ▮ **Municipal Body Vote:** SOIs that are submitted by cities and towns must be approved by a vote of the appropriate municipal body (e.g., City Council/ Aldermen/Board of Selectmen) in addition to a vote of the School Committee.
  - ▮ Regional School Districts do not need to submit a vote of the municipal body.
  - ▮ For the vote of the municipal governing body, a copy of the text of the vote, which shall be substantially the same as the MSBA's SOI vote language, must be submitted with a certification of the City/Town Clerk that the vote was taken and duly recorded, and the date of the vote must be provided.

**CLOSED SCHOOLS: Districts must** download the report from the "Closed School" tab, which can be found on the District Main page. Please print this report, which then must be signed by the Superintendent, the School Committee Chair, and the Chief Executive Officer. A signed report, with original signatures must be included with the District's hard copy SOI submittal. **If a District submits multiple SOIs, only one copy of the Closed School information is required.**

**ADDITIONAL DOCUMENTATION FOR SOI PRIORITIES #1 AND #3:** If a District selects Priority #1 and/or Priority #3, the District is required to submit additional documentation with its SOI.

- l If a District selects Priority #1, Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of the school children, where no alternative exists, the MSBA requires a hard copy of the engineering or other report detailing the nature and severity of the problem and a written professional opinion of how imminent the system failure is likely to manifest itself. The District also must submit photographs of the problematic building area or system to the MSBA.
- l If a District selects Priority #3, Prevention of a loss of accreditation, the MSBA requires the full accreditation report(s) and any supporting correspondence between the District and the accrediting entity.

**ADDITIONAL INFORMATION:** In addition to the information required with the SOI hard copy submittal, the District may also provide any reports, pictures, or other information they feel will give the MSBA a better understanding of the issues identified at a facility.

If you have any questions about the SOI process please contact Diane Sullivan at 617-720-4466 or [Diane.Sullivan@massschoolbuildings.org](mailto:Diane.Sullivan@massschoolbuildings.org).

## Massachusetts School Building Authority

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School District Arlington

District Contact Diane Johnson TEL: (781) 316-3511

Name of School Arlington High

Submission Date 3/23/2015

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### SOI CERTIFICATION

To be eligible to submit a Statement of Interest (SOI), a district must certify the following:

- The district hereby acknowledges and agrees that this SOI is NOT an application for funding and that submission of this SOI in no way commits the MSBA to accept an application, approve an application, provide a grant or any other type of funding, or places any other obligation on the MSBA.
- The district hereby acknowledges that no district shall have any entitlement to funds from the MSBA, pursuant to M.G.L. c. 70B or the provisions of 963 CMR 2.00.
- The district hereby acknowledges that the provisions of 963 CMR 2.00 shall apply to the district and all projects for which the district is seeking and/or receiving funds for any portion of a municipally-owned or regionally-owned school facility from the MSBA pursuant to M.G.L. c. 70B.
- The district hereby acknowledges that this SOI is for one existing municipally-owned or regionally-owned public school facility in the district that is currently used or will be used to educate public PreK-12 students and that the facility for which the SOI is being submitted does not serve a solely early childhood or Pre-K student population.
- After the district completes and submits this SOI electronically, the district must sign the required certifications and submit one signed original hard copy of the SOI to the MSBA, with all of the required documentation described under the "Vote" tab, on or before the deadline.
- The district will schedule and hold a meeting at which the School Committee will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is required for cities, towns, and regional school districts.
- Prior to the submission of the hard copy of the SOI, the district will schedule and hold a meeting at which the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is not required for regional school districts.
- On or before the SOI deadline, the district will submit the minutes of the meeting at which the School Committee votes to authorize the Superintendent to submit this SOI. The District will use the MSBA's vote template and the vote will specifically reference the school and the priorities for which the SOI is being submitted. The minutes will be signed by the School Committee Chair. This is required for cities, towns, and regional school districts.
- The district has arranged with the City/Town Clerk to certify the vote of the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body to authorize the Superintendent to submit this SOI. The district will use the MSBA's vote template and submit the full text of this vote, which will specifically reference the school and the priorities for which the SOI is being submitted, to the MSBA on or before the SOI deadline. This is not required for regional school districts.
- The district hereby acknowledges that this SOI submission will not be complete until the MSBA has received all of the required vote documentation and certification signatures in a format acceptable to the MSBA. If Priority 1 is selected, your Statement of Interest will not be considered complete unless and until you provide the required engineering (or other) report, a professional opinion regarding the problem, and photographs of the problematic area or system.

**Superintendent of Schools**

(signature)

Date

## Massachusetts School Building Authority

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School District Arlington

District Contact Diane Johnson TEL: (781) 316-3511

Name of School Arlington High

Submission Date 3/23/2015

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### Note

#### The following Priorities have been included in the Statement of Interest:

1. ☐ Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children, where no alternative exists.
2. ☐ Elimination of existing severe overcrowding.
3. ☐ Prevention of the loss of accreditation.
4. ☐ Prevention of severe overcrowding expected to result from increased enrollments.
5. ☐ Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6. ☐ Short term enrollment growth.
7. ☐ Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements.
8. ☐ Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

### SOI Vote Requirement

☐ I acknowledge that I have reviewed the MSBA's vote requirements for submitting an SOI which are set forth in the Vote Tab of this SOI. I understand that the MSBA requires votes from specific parties/governing bodies, in a specific format using the language provided by the MSBA. Further, I understand that the MSBA requires certified and signed vote documentation to be submitted with the SOI. I acknowledge that my SOI will not be considered complete and, therefore, will not be reviewed by the MSBA unless the required accompanying vote documentation is submitted to the satisfaction of the MSBA.

**Potential Project Scope:** Renovation/ Addition

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**Is this SOI the District Priority SOI?** YES

**School name of the District Priority SOI:** Arlington High

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**Is this part of a larger facilities plan?** NO

**If "YES", please provide the following:**

**Facilities Plan Date:**

**Planning Firm:**

**Please provide an overview of the plan including as much detail as necessary to describe the plan, its goals and how the school facility that is the subject of this SOI fits into that plan:**



**Please provide the current student to teacher ratios at the school facility that is the subject of this SOI: 15 students per teacher**

**Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI: 15 students per teacher**

**Does the District have a Master Educational Plan that includes facility goals for this building and all school buildings in District?** NO

**Does the District have related report(s)/document(s) that detail its facilities, student configurations at each facility, and District operational budget information, both current and proposed?** NO

**If "NO", please note that:**

**If, based on the SOI review process, a facility rises to the level of need and urgency and is invited into the Eligibility Period, the District will need to provide to the MSBA a detailed Educational Plan for not only that facility, but all facilities in the District in order to move forward in the MSBA's school building construction process.**

**Is there overcrowding at the school facility?** YES

**If "YES", please describe in detail, including specific examples of the overcrowding.**

Over 27% of core classes (ELA, Math, History, Foreign Language) have 25 or more students. Because of scheduling and staffing constraints, larger classes cannot always be located in larger classrooms, so they are held in classrooms too small for the number of students.

The odd shapes, physical obstructions and small square footage of classrooms require desks to be placed close together so students can see the board, which makes it difficult for students to be seated.

From the HMFH report:

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

As described by one teacher:

The columns create a "challenge." It is because of them that a ceiling-mounted projector cannot be installed and used in her classroom. Therefore she needs to write much more on the white board, having to do and undo information throughout the period. This results in loss of teaching and learning time; she estimates it costs them two to three minutes every class period, this in turn results in 8 - 12 hours per school year.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces,

see Appendix C.

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**Has the district had any recent teacher layoffs or reductions?** NO

**If "YES", how many teaching positions were affected?** 0

**At which schools in the district?**

**Please describe the types of teacher positions that were eliminated (e.g., art, math, science, physical education, etc.).**

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**Has the district had any recent staff layoffs or reductions?** NO

**If "YES", how many staff positions were affected?** 0

**At which schools in the district?**

**Please describe the types of staff positions that were eliminated (e.g., guidance, administrative, maintenance, etc.).**

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**Please provide a description of the program modifications as a consequence of these teacher and/or staff reductions, including the impact on district class sizes and curriculum.**

Does Not Apply

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**Please provide a detailed description of your most recent budget approval process including a description of any budget reductions and the impact of those reductions on the district's school facilities, class sizes, and educational program.**

Budget bottom line is voted by School Committee in early January, Superintendent's proposed budget is submitted to School Committee in early February, budget hearing is held end of February, budget voted by School Committee early March, Town Finance Committee holds hearing in late March, Town Meeting approves budget during spring Town Meeting, beginning at end of April and continuing until concluded. There have been no overall budget reductions since FY11.

## General Description

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**BRIEF BUILDING HISTORY:** Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters).

Arlington High School is a sprawling complex that has been built up over the past century. The original 6-story building, now Fusco House, was built in 1914, and now houses classrooms as well as “The Pit,” Old Hall and some offices. The steepled Main Office section was added in 1938, as was Collomb House. These now house the science labs, classrooms, the media center and part of the preschool. Lowe Auditorium, the Blue Gym, the offices and cafeteria, and Downs House (also containing classrooms) were all built in the 1960’s. The Red Gym and the Links Building (with some special education classrooms) were part of the only significant renovation of the buildings. This renovation started in the late 1970’s and was completed in 1981. It also included some window upgrades and space reconfiguration.

Given the age of the buildings, Arlington has focused on keeping the buildings safe and secure for students and faculty. However, addressing areas of concern is an ongoing and ultimately losing process, particularly with exterior masonry. As the On-Site Insight report points out, many systems have reached the end their useful life, and are due for major repairs or replacement.

From the HMFH Report:

A thorough renovation-only of the facility would include (and in part has been identified in the On-Site Insight report as attached):

- Mechanical systems replacement
- \*Electrical system upgrades including an increase to the quantity of power outlets (need to eliminate the extensive use of extension cords)
- Light fixture replacement
- \*Plumbing upgrades and/or replacement, including fully modernized and accessible toilet facilities, and an increase in quantity of locations and fixtures
- \*Solve the water infiltration issue
- \*Security upgrades
- \*Technology upgrades and integration, including wireless service
- \*Audio/visual systems upgrades, including new PA system, simulcast ability, telephones throughout the school, sound systems at Auditorium and Gymnasium, and Auditorium/Stage lighting
- Hazardous material abatement
- Roof replacement
- Exterior door replacement and \*tie-in to the security alarm system
- Exterior window replacement
- Finishes replacement including: -flooring (abate and remove remaining vinyl asbestos tile (VAT), replace all with new)
- \*ceiling treatment (provide with high acoustic and reflectance quality)
- \*wall surfaces (provide durable protection, paint all)
- fixed casework (\*include upgrades to plumbing as appropriate)
- \*teaching surfaces (white-boards and tack-boards)
- \*auditorium seating (replace and provide accessibility)
- corridor lockers and athletic lockers
- \*athletic locker room upgrades
- \*Accessibility upgrades throughout
- Three new elevators

\*Note: these are not included in the scope (or they are minimally included) outlined in the On-Site Insight report.

**TOTAL BUILDING SQUARE FOOTAGE: Please provide the original building square footage PLUS the square footage of any additions.**

400000

**SITE DESCRIPTION: Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site. Please note whether there are any other buildings, public or private, that share this current site with the school facility. What is the use(s) of this building(s)? (maximum of 5000 characters).**

Arlington High School is a large complex (nearly 400,000 square feet) centrally located in the community on a four acre site. Its main façade fronts onto Massachusetts Avenue, set back from the road by a green space with mature trees. At the rear of the complex are several athletic fields (baseball, softball, football, and track and field).

Although there are no other structures, there are other programs that occupy the high school beyond those that serve the high school directly. There are town offices, including facilities and custodial offices, Arlington's inclusion preschool program, the school district's administrative offices, and the LABBB Collaborative Program. All told the approximate square footage usage is as follows:

Town Use 6,800 SF

School/Town Facilities 4,600 SF

Pre-School Program 16,600 SF

School District Use (includes METCO Program) 16,700 SF

LABBB Collaborative Program 9,900 SF

Community/ School Storage 10,300 SF

There are also several site-related environmental issues that would impact any renovation plans:

1. Underground culverted stream (Mill Brook) running west to east at rear of AHS complex.
2. Peirce Athletic Field built over heavy metal waste site. Site was contained and is beneath a barrier.
3. Evidence of perchloroethylene (PCE) contamination\* of groundwater near and/or under AHS complex. Two rooms in the basement (Rm 105 & old Auto Shop) are closed pending PCE mitigation because of elevated air sample levels.

\*[http://www.arlingtonma.gov/Public\\_Documents/ArlingtonMA\\_Health/MassDEP\\_AHS\\_PCE\\_Report\\_8\\_22\\_11.pdf](http://www.arlingtonma.gov/Public_Documents/ArlingtonMA_Health/MassDEP_AHS_PCE_Report_8_22_11.pdf)

**ADDRESS OF FACILITY: Please type address, including number, street name and city/town, if available, or describe the location of the site. (Maximum of 300 characters)**

869 Massachusetts Avenue, Arlington, MA 02476

**BUILDING ENVELOPE: Please provide a detailed description of the building envelope, types of construction materials used, and any known problems or existing conditions (maximum of 5000 characters).**

Excerpts from On-Site Insight report:

Arlington High School, located at 869 Massachusetts Avenue in Arlington, MA, is a sprawling facility that was built in several stages. The original buildings date to the early 19th century and are referred to as the Old Buildings (buildings "A" & "B"). These buildings retain historic details common in that era; specifically a tall clock steeple, columned classical entry façade, and slate roof. The so called Freshman Building [Downs] was added in the early 1960s. During the 1980s all of the buildings were connected to form a large interior courtyard.

The buildings are predominantly clad in brick masonry; the Connector section (built in the early 1980s) is clad in colored and textured concrete masonry units. A section of the roof at the Old Building (Bldg B) is pitched and covered with slate shingles. This section also features a wood framed and clad clock steeple and a classically detailed entry portico. The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system. Windows are believed to date from the 1960 and 1980 expansions. Water is infiltrating through the floor of the Old Buildings mechanical room

concrete floor slab. Several sections of masonry and wood stair sets were observed at the high school. The concrete and granite stair sets vary in age and condition. A pressure treated wood stair set is located at the cafeteria courtyard. It is in fair condition. There is a mix of wood and glass, aluminum and glass, sliding glass, and flush panel metal doors throughout the facility. Exterior doors are believed to date from the 1960 and 1980 expansions, and show signs of heavy use. Evidence of repairs (frame reinforcement, added hinges) was observed on many.

Recent repointing and water proofing work was performed on a portion of the facility. Some deterioration noted, peeling paint observed on trip, soffits and fascia on older parts of the building. A painted wood faux balcony accents the main entry of the high school in poor overall condition, with sections of deterioration noted. There are approximately 17 wall mounted LED and HID security flood lights located around the facility of various ages and conditions. Windows are a mix of wood, steel, and aluminum framed models believed to date to the 1960 and 1980 expansions, all exceeding their expected useful service life.

#### Additional Comments:

The Links Building is elevated, with no insulation beneath. In other parts of the facility there are gaps around the windows, which are unable to be caulked effectively and allow air infiltration. The older windows, damaged exterior doors and uninsulated brick masonry throughout the complex combine to create a very inefficient thermal envelope. This leads to problems with climate control inside the school, as well as high heating bills.

Exterior walls are not seismically reinforced to conform to current codes.

During heavy wind and rain events there is moisture penetration throughout the building envelope. This is addressed first by buckets in halls during the event, and when the event is over, facilities staff search for the source of water and attempt to address it, although it is not always possible to find exact source. Issues associated with water penetration will likely worsen over time.

**Has there been a Major Repair or Replacement of the EXTERIOR WALLS?** YES

**Year of Last Major Repair or Replacement:(YYYY)** 1978

**Description of Last Major Repair or Replacement:**

Part of most recent renovation and upgrade, re-pointing and re-mortaring as needed.

#### Roof Section A

**Is the District seeking replacement of the Roof Section?** YES

**Area of Section (square feet)** 7452

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**  
slate

**Age of Section (number of years since the Roof was installed or replaced)** 80

**Description of repairs, if applicable, in the last three years. Include year of repair:**

n/a

#### Roof Section B

**Is the District seeking replacement of the Roof Section?** YES

**Area of Section (square feet)** 10722

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**  
metal standing seam

**Age of Section (number of years since the Roof was installed or replaced)** 37

**Description of repairs, if applicable, in the last three years. Include year of repair:**

minor repairs to attached gutters

#### Roof Section C

**Is the District seeking replacement of the Roof Section?** YES

**Area of Section (square feet)** 79278

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

TPO membrane roofing

**Age of Section (number of years since the Roof was installed or replaced)** 15

**Description of repairs, if applicable, in the last three years. Include year of repair:**

n/a

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**Roof Section D**

**Is the District seeking replacement of the Roof Section?** YES

**Area of Section (square feet)** 25092

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

TPO membrane roofing

**Age of Section (number of years since the Roof was installed or replaced)** 9

**Description of repairs, if applicable, in the last three years. Include year of repair:**

n/a

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**Roof Section E**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Roof Section F**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Roof Section G**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Roof Section H**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Roof Section I**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)**

**Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))**

**Age of Section (number of years since the Roof was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Roof Section J**

**Is the District seeking replacement of the Roof Section?**

**Area of Section (square feet)****Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))****Age of Section (number of years since the Roof was installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section A****Is the District seeking replacement of the Windows Section? YES****Windows in Section (count) 371****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))**

steel/wood framed double hung and casement style windows, no double glazing

**Age of Section (number of years since the Windows were installed or replaced) 53****Description of repairs, if applicable, in the last three years. Include year of repair:**

minimal repairs

**Window Section B****Is the District seeking replacement of the Windows Section? YES****Windows in Section (count) 565****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))**

aluminum frame fixed panel and awning style windows

**Age of Section (number of years since the Windows were installed or replaced) 36****Description of repairs, if applicable, in the last three years. Include year of repair:**

minimal as needed

**Window Section C****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section D****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section E****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section F****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section G**

**Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section H****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section I****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****Window Section J****Is the District seeking replacement of the Windows Section?****Windows in Section (count)****Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))****Age of Section (number of years since the Windows were installed or replaced)****Description of repairs, if applicable, in the last three years. Include year of repair:****MECHANICAL and ELECTRICAL SYSTEMS: Please provide a detailed description of the current mechanical and electrical systems and any known problems or existing conditions (maximum of 5000 characters).**

Please see the On-Site Insight Capital Needs Assessment, completed in August 2013, for detailed information about issues and needs in mechanical and electrical systems. Portions are excerpted below.

From On-Site Insight Report, systems at or beyond their expected service life or in need of extensive repair include:

- Main heating system (most boilers, temperature control, steam plumbing, heat ventilators, etc.)
- Hot water (storage tank, distribution)
- Ventilation/cooling systems (building exhaust fans, rooftop air units)
- Power wiring throughout complex (many classrooms have only one outlet, some have none, wiring inadequate for load)
- All exterior doors, all windows, steeple and balcony
- All interior fire doors, interior steel doors, vinyl tile throughout complex
- Auditorium heating, ventilation and air conditioning system
- Elevator (undersized, and only one for entire complex)

The two central mechanical rooms contain the heating systems. The domestic hot water (DHW) systems are located in separate areas of the facility. The heating system consists of four, gas-fired steam boilers. The condensed (spent) steam is returned to the boilers via a main condensation receiver and several small receiver stations. The DHW system features two gas-fired boilers and one large storage and two smaller storage tanks. The heating systems are controlled by an antiquated pneumatic control systems and compressed air operated steam valves. Compressed air for this system is supplied by two air compressors, one of which was recently replaced. Several sections of the facility are heated using hydronic heat that is created by passing boiler steam through an array of heat exchangers. Hydronic heat circulation is achieved by several base-mounted pump assemblies.



The major building systems include security, fire suppression, heat/ventilation systems, air conditioning, stale air exhaust equipment, emergency egress lighting, fire/smoke detection and notification system, and elevator. The high school features and extensive closed circuit television system (CCTV) for security monitoring. The high school features a limited, street pressure, fire sprinkler system for fire suppression. Classrooms are heated and ventilated by exterior wall mounted ventilators which have exceeded their expected service life. Selected areas of the school building are air conditioned using split-system air conditioners with a SEER rating of 10. The gymnasiums and locker rooms are ventilated and heated by interior mounted, steam heated, air handler units, which have exceeded their expected service life. Several section of the Old Building (A & B) feature "J. C." roof mounted, hydronically heated, makeup air units which have exceeded their expected service life. An array of roof mounted exhaust fans remove stale air from the building, about half of which have been recently replaced. The electrical distribution system of the high school varies widely in age, manufacture, and condition. The emergency egress lighting is a mix of wet and dry cell battery powered fixtures, varying in age and condition. There are three smoke/fire detection systems at the facility, all recently replaced. There is one hydraulic elevator which serves all floors of the facility. The elevator is located in the oldest (A) building.

Please see the On-Site Insight report for greater detail.

**From HMFH Report:**

The complex has just one, antiquated elevator and for a school building of this size, it does not provide adequate and equal accessibility, in that it is not convenient for the intended users and it does not provide access to all of the building's floor levels.

**Additional comments:**

There is a lack of outlets in the Downs Building, leading to the use of extension cords. There are shortcomings with electrical distribution throughout the Downs Building, where distribution panels are old and parts are unavailable. When issues occur, electrical demand is reduced until the panel can be replaced during the summer break.

Univents in the Downs Building need to be replaced as they are beyond their useful life. This impacts air quality in Downs Building. In addition, there is no provision for air exchange in some corridors throughout the building, which is non-compliant with current standards. The cafeteria has an inadequate mechanical exhaust system; staff addresses air quality by opening doors to the interior courtyard.

Half of the building complex is heated with steam pipes. The steam condensate collection and return system needs to be replaced per On-Site Insight. The steam system, especially return pipes, needs constant repairs and maintenance due to the aging piping system. Adding virgin water to system due to leaks degrades pipes over time. Fortunately, there have been no injuries due to steam.

Only the high school and central administration areas, and the computer rooms, have air conditioning.

**Boiler Section 1**

**Is the District seeking replacement of the Boiler?** YES

**Is there more than one boiler room in the School?** YES

**What percentage of the School is heated by the Boiler?** 25

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

natural gas

**Age of Boiler (number of years since the Boiler was installed or replaced)** 50

**Description of repairs, if applicable, in the last three years. Include year of repair:**

ongoing maintenance typical of their age

**Boiler Section 2**

**Is the District seeking replacement of the Boiler?** YES

**Is there more than one boiler room in the School?** YES

**What percentage of the School is heated by the Boiler?** 25

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

natural gas

**Age of Boiler (number of years since the Boiler was installed or replaced)** 50

**Description of repairs, if applicable, in the last three years. Include year of repair:**  
ongoing maintenance typical of its age

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**Boiler Section 3**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

---

**Boiler Section 4**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Boiler Section 5**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Boiler Section 6**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Boiler Section 7**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Boiler Section 8**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

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**Boiler Section 9**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

**Boiler Section 10**

**Is the District seeking replacement of the Boiler?**

**Is there more than one boiler room in the School?**

**What percentage of the School is heated by the Boiler?**

**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

**Age of Boiler (number of years since the Boiler was installed or replaced)**

**Description of repairs, if applicable, in the last three years. Include year of repair:**

**Has there been a Major Repair or Replacement of the HVAC SYSTEM? YES**

**Year of Last Major Repair or Replacement:(YYYY) 2013**

**Description of Last Major Repair or Replacement:**

Administrative 6th floor had replacement of 15 window unit air conditioners replaced with centralized, energy efficient system.

**Has there been a Major Repair or Replacement of the ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM? YES**

**Year of Last Major Repair or Replacement:(YYYY) 1978**

**Description of Last Major Repair or Replacement:**

No major upgrades since last renovation.

**BUILDING INTERIOR: Please provide a detailed description of the current building interior including a description of the flooring systems, finishes, ceilings, lighting, etc. (maximum of 5000 characters).**

From On-Site Insight report:

Interior walls include painted CMU, glazed facing tile, and painted gypsum wall board (some with metal sheathing to limit damage).

Interior spaces include hallways, classrooms, support learning areas; cafeteria and commercial kitchen; two gyms, weight room and locker/shower facilities; auditorium and stage area; school offices, school department offices, and restrooms. Most these areas have vinyl composite tile (VCT) flooring. With the exception of approximately 2%, which has been recently replaced by the maintenance staff, the VCT has exceeded its expected useful service life. Many worn areas were observed. Most of the interior fire doors are failing in that hinges have been replaced a number of times and the doors are now dragging and will not provide protection they were originally intended to provide. The interior lighting was upgraded, in phases, to all fluorescent fixtures in the past. The fluorescent lighting is a mix of different ages and bulb types. Metal recessed lockers throughout the hallways of the school's buildings, varying widely in age and condition. Stairs are covered with rubber flooring and treads in various conditions. Doors are double metal fire rated types in various conditions. Classrooms vary in size and use. Floors are VCT and the walls and ceilings are painted surfaces. Each classroom has a set of wood cabinets and shelving. Science and technology classrooms also feature furnishing specific to their individual needs. The Auditorium features acoustic wood paneled walls and some small areas of painted drywall; the ceiling is a painted surface. Flooring is a mix of replaceable wood stage paneling (considered an operating expense), carpeted aisles, and sealed concrete (under the seats). Restrooms feature painted walls and ceilings, ceramic tile floors, and standard institutional grade fixtures. Portions are aged metal types in poor condition. Some partitions have been replaced with heavy duty PVC paneling. Fixtures and accessories have been replaced on an as needed basis.

**Additional Comments:**

There are an insufficient number of restroom facilities for the population size. The auditorium lacks handicap-accessible seating and nearby handicap-accessible toilets can only be accessed by passing through multiple fire doors. Plaster on the auditorium ceiling has fallen down on two occasions.

**PROGRAMS and OPERATIONS: Please provide a detailed description of the current programs offered and grades served, and indicate whether there are program components that cannot be offered due to facility constraints, operational constraints, etc. (maximum of 5000 characters).**

Arlington High School offers a rigorous academic program with options for all students. Graduation requirements include four years of English, three years of Math, Science, History / Social Studies, and PE/Health, one year of Fine Arts, two years of a Foreign Language, and 40 hours of Community Service.

Class work is student-centered and staff work hard to ensure students leave with strong teamwork skills, well-developed oral presentation skills, and high mastery of individual content areas. Students are expected to utilize current technology (PowerPoint, Excel, etc) in their school work. All Science courses have labs incorporated into the curriculum. AHS partners with Syracuse University's Project Advance Program in a dual enrollment Economics course.

The school complex has significantly changed since the first building was constructed in 1914. Nearly 100 years of expansion, additions, and re-configurations have resulted in layers and layers of re-purposed and retrofitted classrooms that are forced to fit into a space that is incompatible with today's teaching methods.

Following are some of the programmatic constraints of the facility:

- The Media Center/Library has been divided in half to accommodate academic support rooms, a music classroom and a substantially separate Special Education classroom.
- Many classrooms contain pillars that not only obstruct student and teacher views, but also severely limit accessibility and usable space in the classroom.
- Undersized classrooms prevent small group collaboration, forcing students to meet in small groups in hallways and stairwells.
- The facility impedes technology implementation; particularly for WIFI and ceiling mounted projectors.
- Inadequate wiring and insufficient electrical outlets in classrooms result in frequently tripped circuit breakers from simultaneous use of projection and computer equipment.
- Inadequately sized science labs do not provide enough lab workstations for all students to perform experiments safely at the same time.
- Two rooms in basement (old Auto Shop and one classroom) are closed due to environmental concerns (PCE). These rooms provide the only access to the courtyard garden, and thus limit environmental studies offerings.
- The Visual Arts Department lacks a studio, and classrooms are too small to provide storage for projects such as clay and sculpture, constraining art offerings.
- Inadequate classroom space impedes the ability to provide sufficient support services.
- Inadequate small group meeting spaces hinder the ability of student groups and teachers to collaborate.

Arlington's state mandated inclusion preschool resides in the high school. Its space has limitations:

- Poor classroom configuration obstructs collaboration and service delivery.
- Tiny therapy rooms lack windows.
- Building structure is not designed for preschool uses (sizes of bathroom fixtures, shared entrance).
- Preschool classrooms are not adjacent to each other.

From HMFH report:

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. (For a diagram of the program layout, see Appendix C.) Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to

discuss interdisciplinary teaching plans and the students in their charge.

Following are the presently known missing and/or inadequate educational spaces:

- Science: additional classrooms and specifically Biology classrooms
- A flexible modern library “learning commons” to serve as central meeting, collaboration, study, support, and presentation space
- Culinary Arts: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- Music: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education: Health classroom and Dance studio
- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom

**CORE EDUCATIONAL SPACES: Please provide a detailed description of the Core Educational Spaces within the facility, a description of the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, a description of the cafeteria, gym and/or auditorium and a description of the media center/library (maximum of 5000 characters).**

Only 23% of general classrooms meet the minimum MSBA size requirement of 825-950 SF. 20% of all classrooms are irregular shaped and/or have obstructions, conditions which negatively affect teaching and pose safety and accessibility concerns. Science labs are undersized, averaging 1,000SF.

The Media Center/Library is centrally located within the complex and is comprised of multiple sections: a 1000 SF hallway, two “open concept” class/lab spaces, a teacher resource room, and other work space. Due to its location, and as a result of the facility's convoluted hallways and stairwells, it is used as a pathway to get from one place to another. This traffic causes severe disruption, but there is no better way to configure the area. The Media Center is divided into multiple spaces without clear lines of sight. There are no areas with sound containment for classes or small group meetings.

From HMFH report:

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces,

see Appendix C in the Analysis of Programmatic Needs.

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").
- Telephones: for security, telephones are required in every teaching space.
- PA system: the current system is outdated, does not access all of the building, creating a safety risk, and is extremely jarring to the occupants.
- Sinks and eyewash/ shower stations: a sufficient quantity of sinks, appropriately located, is required for sanitary, safety, and project-based learning; operating eyewash/ shower stations are required at all Science classrooms.
- Flexible, movable furnishings: Science classroom furniture is bolted to the floors creating a rigid and often inappropriate classroom layout.
- Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading
- Spaces for small, pull out services for Special Education

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**CAPACITY and UTILIZATION: Please provide a detailed description of the current capacity and utilization of the school facility. If the school is overcrowded, please describe steps taken by the administration to address capacity issues. Please also describe in detail any spaces that have been converted from their intended use to be used as classroom space (maximum of 5000 characters).**

Currently the high school has an enrollment of 1294, which is expected to reach 1684 by 2025, an increase of 30%. This enrollment growth projection is based on both existing students currently in our schools and very young children presently living in town. We have seen the entire district grow at or above 2% in four of the last six years. Should growth continue at that pace, it will exceed these projections and place even more enrollment pressure on the high school.

Based on existing students, there are already scheduling difficulties and an inability to match size of class and classroom. In 2014-15, the high school hired an additional four teachers, further increasing utilization rates and scheduling pressures. The school plans to hire at least one additional teacher, and possibly more, in 2015-2016.

Classrooms in each department are utilized all class periods in order to provide additional sections to help reduce class sizes. Some classrooms have been divided in half to create more classroom spaces. For example, in the World Languages Department, one divided classroom of approximately 400 square feet currently hosts classes of 25 students. Many non-traditional classroom spaces have been converted for student use, including: the choir room (occupying backstage area of theater), band room (formerly a classroom), Media Center/Library (divided in half for use as classrooms such as Learning Center, Music Technology, Transition Program, Special Education), and a storage room that was converted to a classroom.

There is no space in the high school large enough to meet with the entire student population; the auditorium seats approximately 900 and the gyms are not large enough to seat all students. Similarly, the only meeting space large enough for the entire faculty to meet and work together is the cafeteria, which is not conducive for that purpose. The facility houses Arlington's state-mandated inclusion preschool. This program is also a lab for the high school's academic program that offers courses in early childhood development.

Additionally, the high school continues to examine and implement innovative programs, some of which can help mitigate

burgeoning student enrollment. On-line courses, internships, capstone projects and an alternative high school program to be offered off-site but nearby, are a few examples of these approaches.

The space occupied by various Town offices (Retirement, Information Technology, Building Maintenance) is not felt to be appropriate for classroom use due to its limited size, lack of accessibility and lack of natural light.

From the HMFH report:

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally, the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Small-group rooms and break-out spaces allow for differentiated instruction; currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of spaces for support services such as guidance and special education.

The high school is already experiencing overcrowding in the classrooms and it does not have sufficient classrooms for the number of teachers in the building. As the number of teachers is expanded to respond to very large class sizes, it will increasingly be difficult to schedule classes into existing classrooms, some of which are already booked for every period. Support services, such as toilet facilities, shared storage rooms and faculty workrooms are few and far between, which has a significant impact in a building of this size.

Additionally, student services such as guidance, social work, METCO program, and administrative oversight, would benefit from an analysis identifying their best locations. In some instances they need to be readily accessible throughout the building while in others, for privacy and comfort, need to be a bit more tucked away.

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**MAINTENANCE and CAPITAL REPAIR: Please provide a detailed description of the district's current maintenance practices, its capital repair program, and the maintenance program in place at the facility that is the subject of this SOI. Please include specific examples of capital repair projects undertaken in the past, including any override or debt exclusion votes that were necessary (maximum of 5000 characters).**

The Maintenance Department consists of a Supervisor, three carpenters, two electricians, one plumber, and two construction/handymen. Job requests are submitted and managed via an electronic help desk. This Maintenance Department is responsible for both the Town and the School District.

Capital requests come from facilities studies, Department Directors and the Superintendent of Building Maintenance. Projects include roofs, boilers, flooring, doors, construction infrastructure projects, security upgrades, heating and ventilating equipment replacement, etc.

The School Maintenance Department has preventative maintenance programs in place for boilers, ventilation systems, fire alarms, fire sprinklers, elevators and roofs.

The Town Manager is responsible for submitting a five-year capital plan to the Selectmen each year, with input from the schools and other departments. The goal of the Capital Planning Committee is to provide a means of planning for the maintenance and/or improvement of the capital assets and infrastructure of the Town.

The following is a summary of some of the projects done to keep the building in working order:

**Fire Protection and Security:** Alarm panels have been upgraded and an addressable system has been installed in part of the building. Carbon monoxide detectors are being added this summer.

**Building Security:** The district has installed 28 surveillance cameras and four door entrance proximity readers. Doors have been secured by removing exterior handles where exiting is the only requirement. This reduces attempts at break-ins.

**ADA Compliance:** In the past year, an additional curb cut was installed, along with two handicap parking places, in addition to an adjacent electronic door opener.

**Hazardous Materials:** The district contracts with licensed vendors for asbestos abatement as needed.

**Building Structure and Envelope:** Ceiling cracks are repaired as needed. Floor tiles and stair nosings are replaced as needed. After heavy rain and moisture penetrations, the maintenance department performs spot re-pointing on masonry and applies spray-on waterproofing.

**Electrical:** Improvements to the electrical system are completed when necessary and if it is possible to retrofit into existing electrical systems.

**HVAC:** In addition to replacing two of the four boilers in the building, a \$100,000 upgrade to the existing Energy Management System is currently being installed. This installation will improve the current situation, but not fix all HVAC problems.

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**Priority 3**

***Question 1: Please provide a detailed description of the "facility-related" issues that are threatening accreditation. Please include in this description details related to the program or facility resources (i.e. Media Center/Library, Science Rooms/Labs, general classroom space, etc.) whose condition or state directly threatens the facility's accreditation status.***

The NEASC letter of September 2013 cited the following facilities issues when it put AHS on warning status:

Curriculum-related:

- the negative impact of the facility on the delivery of the school's written curriculum
- the insufficient number and size of general classrooms and art classrooms
- the layout and design of classrooms with columns and posts that limit students' vision and obstruct their movements
- the insufficient size and design of science labs
- the need for the increased availability of a full range of technology

Community-resource related:

- the school site and plant that minimally support the delivery of the school's high quality educational programs and services
- the poor condition and lack of cleanliness of the building
- the lack of handicap access and egress to the facility
- the lack of ADA compliance in the auditorium and in "the pit"
- the closure of a classroom due to environmental concerns
- the worn, broken, and poor condition of desks and tables, and lab supplies that are not up to current standards

From the NEASC Report:

Arlington High School is a complex of three buildings. The space for programs and services is crowded and show signs of age, wear, and inadequate maintenance. There is insufficient classroom and lab space to support the curriculum. Quality instruction is being delivered by teachers in spite of the impediments of a crowded and deteriorating building. Although students and teachers have pride in the programs at AHS, the advanced age of the building shows significant signs of wear and tear. Science labs are not sufficient in size or design for some classes that have larger enrollments. Columns and posts in rooms obstruct student vision and movement. Media center renovations have created a space for student collaboration and the use of technology and the facility is used extensively before, during and after school. The school has significant gym and workout space with a variety of programs available. Classrooms are insufficient in number and size especially in science and art classrooms, where class size exceeds the number of available stations in some classrooms. Students are able to achieve educational goals and objectives in spite of a facility with significant needs.

Deficiencies in science laboratory safety, handicap entrance and egress, and fire drill procedures exist as a part of the physical plant. Science laboratories either have no or limited access to eyewash stations/ showers or eyewash stations/ showers that have no documentation of inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements.

From the HMFH report:

We have identified existing space deficits, including size, quantity, configuration, obstructions, technology and other necessary features, and location within the school building. What has not been identified are the additional educational spaces required to continue to allow Arlington High School to achieve excellent academic results:

- Science requires: additional classrooms and specifically Biology classrooms
- A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space.
- Culinary Arts requires: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education requires: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more

secure counseling spaces

- Music requires: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education requires: Health classroom and Dance studio
- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

**Priority 3*****Question 2: Please describe the measures the district has taken to mitigate the problem(s) described above.***

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Since the time of this report, we have been able to fill the Day Custodial Supervisor position (which at the time of the NEASC visit had been vacant for five months) and we have added a Night Custodial Supervisor position as well. The strengthening of oversight in the custodial area has made tremendous improvements to the cleanliness of the high school, and in fact raised the bar on the cleanliness of the district as a whole.

Additionally, school administration and School Committee have been working with Town officials and volunteers through the Capital Planning Committee, the Long Range Planning Committee, the Finance Committee and other groups to raise awareness of the need for radical improvement to the high school facility. A capital needs assessment was commissioned and completed by On-Site Insight to evaluate the purely physical needs of the high school complex. HMFH was also engaged to work with the high school faculty to develop a concise statement of programmatic needs. It was widely felt that both of these reports would aid the School Department in gaining community awareness and support for a much needed project, in advance of a formal application to the MSBA.

**Priority 3**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem(s) identified.***

## From NEASC Report:

The size and number of classrooms is insufficient. The condition of the facilities limits the staff's ability to implement the curriculum. Columns and posts in rooms obstruct student vision and movement. Science labs are not sufficient in size or design for some classes that have larger enrollments. Deficiencies in science laboratory safety and handicap entrance and egress exist in the facility. Science laboratories either have no or limited access to eyewash stations/showers or eyewash stations/showers that have no documentation of current inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements.

## From HMFH Report:

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. (For a diagram of the program layout, see Appendix C.) Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to discuss interdisciplinary teaching plans and the students in their charge.

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; 40% of science classes exceed 23 students, with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- 1 Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- 1 Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").

- 1 Simulcast ability: the ability to broadcast to multiple areas of the building creates wide-reaching opportunities for learning.
- 1 Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- 1 Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading to shortages in the system.

Please consult the full attached reports for greater detail which support the NEASC Recommendations, which include:

- 1 Develop and implement a long-range plan, with a timeline for completion and a source of funding, to completely address school facility needs.
- 1 Address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards.
- 1 Address all health and safety issues including science labs, egress plans for evacuation, and handicap accessibility.

**Please also provide the following:**

**Name of accrediting entity (maximum of 100 characters):**

NEW ENGLAND ASSOCIATION OF SCHOOLS & COLLEGES, INC. COMMISSION ON PUBLIC SCHOOLS (NEASC)

**Current Accreditation Status: Please provide appropriate number as 1=Passed, 2=Probation, 3=Warning, 4=Lost:**  
3

**If "WARNING", indicate the date accreditation may be switched to Probation or lost:** 10/1/2014

**If "PROBATION", indicate the date accreditation may be lost:**

**Please provide the date of the first accreditation visit that resulted in your current accreditation status.:**  
4/7/2013

**Please provide the date of the follow-up accreditation visit:** 10/1/2014

**Are facility-related issues related to Media Center/Library? If yes, please describe in detail in Question 1 below.:**  
YES

**Are facility-related issues related to Science Rooms/Labs? If yes, please describe in detail in Question 1 below.:**  
YES

**Are facility-related issues related to general classroom spaces? If yes, please describe in detail in Question 1 below.:** YES

**Are facility-related issues related to SPED? If yes, please describe in detail in Question 1 below.:** YES

**Are facility-related issues related to support spaces? If yes, please describe in detail in Question 1 below.:**  
YES

**Are facility-related issues related to "Other"? If yes, please identify the other area below and describe in detail in Question 1 below.:** NO

**Please describe (maximum of 100 characters).:**

**Priority 4**

***Question 1: Please describe the conditions within the community and School District that are expected to result in increased enrollment.***

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Based on a five year weighted average to measure continuity rates from grade to grade, the Arlington Public Schools are anticipating significant space pressure at both the middle and the high school buildings. Since 2000 the district has grown 28%, from 4165 to 5326 students. Much of this growth has been concentrated at the elementary level. Projecting forward in time while using current continuity rates, high school enrollment of 1294 is projected to rise to 1430 in five years and 1684 in ten years. At the same time, enrollment at the Ottoson Middle School is projected to rise from the current level of 1125 (above the design capacity of 1050), to 1303 in five years and 1490 in ten years. These enrollment growth projections are based on existing students currently in the schools and very young children presently living in town. The entire district has actually grown at or above 2% in four of the last six years. Should growth continue at that pace, it will exceed these projections and place even more enrollment pressure on the district.

Please see the attached Enrollment Projection spreadsheets.

**Priority 4**

***Question 2: Please describe the measures the School District has taken or is planning to take in the immediate future to mitigate the problem(s) described above.***

Arlington has experienced steadily increasing enrollment at all grade levels since 2000. To alleviate space needs at the high school, and to improve conditions for Arlington's state-mandated inclusion preschool, efforts were made to design a suitable early childhood space during the reconstruction of the Thompson School. Unfortunately, size constraints of the site and available funding from the Town made this impossible. The preschool is currently housed in the high school, in a space not well designed to accommodate a preschool's needs, nor able to provide the needed additional space as the program continues to expand.

At the elementary level, although our newest school was built with a larger capacity to help absorb the influx of new elementary students, the Thompson school is presently enrolled above its design capacity. Arlington has redistricted its elementary schools and instituted buffer zones between the neighborhood school districts. This redistricting helped to shift the student population away from densely populated schools and redistribute it more evenly. The creation of buffer zones allows district administration to have some ongoing flexibility in the allocation of students in the future.

As this much larger elementary population ages up, the district expects overcrowding at both the middle and the high school. The middle school is already over its design capacity of 1050 students, and is expected to reach 1430 in five years. However, of the two buildings, the high school is in much greater need of a thorough renovation and reconstruction. It is also situated on a larger parcel of land. One possible solution to enrollment pressure in both places would be to create an eighth grade academy within a reconstructed high school. Moving the eighth grade class out of the middle school would reduce the enrollment to slightly below the middle school's design capacity for the foreseeable future without the need for further expansion on a very space-limited site. Another option for reducing enrollment pressure at the middle school or high school might include temporary classrooms until additional classrooms can be built later, if necessary.

Additionally, the high school continues to examine and implement innovative programs, some of which can help mitigate burgeoning student enrollment. On-line courses, internships, capstone projects and an alternative high school program to be offered off-site but nearby, are a few examples of these approaches.

Please see the attached projection sheets for further details on anticipated enrollment.

**Priority 4**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

From the HMFH report:

Arlington High School was constructed for a different time in education than what is expected today, let alone what will be required into the foreseeable future. 21<sup>st</sup> century schools are all about technology, inter-connectedness, collaboration, interaction, hands-on learning and making, experiences, teamwork, and interpersonal skills. The excellent teaching staff at the high school knows this and accomplishes much within the constraints of the antiquated facility. It is time to look to the future and to make every effort to create an environment that supports the dynamic teaching at Arlington High School.

School buildings need clear way-finding and be navigable by all, student and visitor alike. Schools need to have spaces in a variety of sizes that are adjacent to one another to provide appropriate space for differentiated learning styles. The spaces need to be flexible in terms of variety of sizes, and a level of consistency among the amenities. The teaching spaces need to be supported by today's teaching tools, such as ceiling projectors, wireless, and the like. Schools must achieve these goals in an environment that is at the same time, inviting, open, secure, and supervised. When thinking of any building today, but perhaps most especially buildings used for educating students, we need to be planning sustainably, using our existing resources wisely, and thinking even further into the future about what else may need to be accommodated on the high school site. Designing sustainably means with the outdoor, as well as the indoor, environment in mind, while creating a long-lasting, low-maintenance, well-planned facility to accommodate flexibility and growth.

Schools need to be safe and secure havens for all that enter. Simple things like signage, color, exposure to natural light, connection through views to nature and the surroundings, combine to create a secure, understandable environment in which today's and tomorrow's student learn and grow. These are possible to achieve within a thorough, thoughtful renovation, but they need to be planned for and supported by the community's resources in order for the high school to best support the youth of Arlington into the coming decades.

**Please also provide the following:**

<b>Cafeteria Seating Capacity:</b>	450
<b>Number of lunch seatings per day:</b>	3
<b>Are modular units currently present on-site and being used for classroom space?:</b>	NO

**If "YES", indicate the number of years that the modular units have been in use:**

**Number of Modular Units:**

**Classroom count in Modular Units:**

**Seating Capacity of Modular classrooms:**

**What was the original anticipated useful life in years of the modular units when they were installed?:**

<b>Have non-traditional classroom spaces been converted to be used for classroom space?:</b>	YES
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**If "YES", indicate the number of non-traditional classroom spaces in use:** 13

**Please provide a description of each non-traditional classroom space, its originally-intended use and how it is currently used (maximum of 1000 characters):**



Band room was originally large classroom.

Three work areas and lounges built in 1914 now used as classrooms.

Academic support classrooms, music classroom, Special Education classroom all carved out of Library/Media Center space.

Two therapy offices and METCO Director office made from 1914 auditorium balcony.

“The Pit” a subterranean athletic practice area with poor acoustics, often used as classroom when classes need a large space.

Two storage closets converted to therapy rooms for preschool students.

**Please explain any recent changes to the district’s educational program, school assignment policies, grade configurations, class size policy, school closures, changes in administrative space, or any other changes that impact the district’s enrollment capacity (maximum of 5000 characters). :**

At the elementary level, the newest school was built with a larger capacity to help absorb the influx of new elementary students. Arlington has redistricted its elementary schools and instituted buffer zones between the neighborhood school districts. This redistricting helped to shift the student population away from densely populated schools to redistribute students more evenly. The creation of buffer zones allows the district administration to have some ongoing flexibility in the allocation of students in the future.

**What are the district’s current class size policies (maximum of 500 characters)?:**

There is no specific policy regarding class size, although efforts are made to have elementary classes of 24 or less and secondary classes of 26 or less.

## Priority 5

***Question 1: Please provide a detailed description of the issues surrounding the school facility systems (e.g., roof, windows, boilers, HVAC system, and/or electrical service and distribution system) that you are indicating require repair or replacement. Please describe all deficiencies to all systems in sufficient detail to explain the problem.***

Please see the attached On-Site Insight report, section 2 (page 8-29) and section 3 (page 40-56) for a report of the existing deficiencies in the high school facility systems. Of particular note is the Executive Summary Dashboard on page 5, which shows that the vast majority of needed improvements are so urgent that they should be scheduled in the first year of the plan.

### Building Security

The school manages 35 exterior entrances that contain 50 separate doors. These doors have been repaired and upgraded to make them more secure. However, monitoring access to the school's doorways is complicated both during and outside of school hours. None of these doors are alarmed and retrofitting alarms to all the exterior doors with alarms and motion sensors would cost over \$200,000.

The school has many entrances, long hallways and connecting passages, with blind endings and hidden corners. Page 8 of the HMFH report outlines in detail the security risks posed by this situation, including that long stretches of hallway are without occupied space and therefore without supervision. An additional risk of the configuration of the school noted by HMFH is that it is easy to become lost and disoriented, and that it can be a challenge to find the best egress path. In addition, telephones are not available in all classrooms and the public address system is outdated, posing a safety risk in the event of an emergency. There would "no room-to-room communication" without 2-way radios that have been distributed throughout the building. Only these radios allow staff to communicate across a wide-ranging facility with instant connection in case of emergencies.

The High School has 28 security surveillance cameras, divided between interior and exterior. Some of the 16 exterior cameras cover more than one door. Picture quality is not good when dealing with distances and darkness. Newer cameras with more mega-pixel capability would perform better. More modern features are available that allow better identification of individuals and motor vehicles, stronger zoom functions, and a greater ease of use. All of these functions would greatly improve the security functionality of these cameras. These improvements, as well as relocating and adding some cameras, would also necessitate an investment in a new server and software that would bring the High School to an enterprise class infrastructure.

### ADA Compliance

While there are four accessible entrances/exits in the building, there remain challenges for disabled students and staff. There is only one elevator in the 400,000 square feet of the complex. It can take more time than is available between classes to travel if one needs an elevator, potentially impacting class time. The elevator is also aging and not entirely reliable. Certain areas of the school are inaccessible. The Pit, the stage in the little theater, and the stage in Old Hall cannot be reached by wheelchair. Also, no accessible student bathrooms are near the auditorium, causing hardship.

### Fire Suppression

Fire suppression systems are not all at the same level throughout the school. Some parts of the school have sprinklers, but the Downs Building does not, and there are no plans to install them given the state of that wing. Fire alarm protection exists in all buildings, which detect smoke and heat. Upgrades to the system to include carbon monoxide detection have begun. However, only 20% of the fire alarm system is a modern, addressable system. Therefore, most of the building relies on a more antiquated system that potentially increases the time required to address a fire.

emergency in the building. Page 9 of the HMFH report outlines concerns about the fire alarm system, concluding that whole areas of the building would not be aware of an emergency in another area of a building if staff relied solely on the fire alarm system. In addition, Smoke doors in corridors and fire doors at stairs are not working per manufacturer's specifications. All interior fire doors, interior steel doors, vinyl tile throughout complex

### Building Envelope

Exterior masonry is in need of major repairs given its age. The On-Site Insight report (page 60) states that the cost of building architectural repairs would be \$12 million.

During heavy wind and rain events there is moisture penetration throughout the building envelope. This is addressed first by buckets in halls during the event, and when the event is over, facilities staff search for the source of water and attempt to address it, although it is not always possible to find the exact source. Issues associated with water penetration will likely worsen over time.

Many windows are original to the buildings, most are single paned, and are not energy efficient. This leads to uneven temperatures in the building. Additionally, there are significant deficiencies in insulation and air sealing due to the types and ages of building construction.

Stress cracks appear in interior masonry block cell ceilings. Again, these issues are addressed as they occur, but it is an ongoing and increasing concern.

These factors create a very inefficient thermal envelope that works against good climate control. It is impossible to maintain an optimal temperature in most of the building.

There are tripping hazards where there are cracked floor tiles, and missing or broken stair nosings. Addressing this is a constant process.

### Hazardous Materials

Asbestos is in tiles and pipe coverings throughout the building. If there is a risk of asbestos becoming friable, abatement is done in accordance with AHERA compliance standards.

The plumbing has lead soldered joints that could become a problem as standards change.

### Electrical

Even though electrical service into the building was done over in 1980, power wiring throughout the complex present multiple concerns. There is a lack of outlets in the Downs Building where many classrooms have only one outlet leading to the use of extension cords. There are even some classrooms without an outlet. There are shortcomings with electrical distribution throughout the Downs Building, where distribution panels are old and parts are unavailable. When issues occur, electrical demand is reduced until the panel can be replaced during the summer break.

### Gas

In some science labs, the gas shut off valve is in another room, causing a safety concern. This is part of the HMFH report, on page 9.

### HVAC System

Univents in the Downs Building need to be replaced because they are beyond their useful life. This impacts air quality in Downs Building. In addition, there is no provision for air exchange in some corridors throughout the building, which is non-compliant with current standards. The cafeteria has an inadequate mechanical exhaust system; staff addresses air quality by opening doors to the interior courtyard.

There are two boiler rooms for the school, each containing two boilers. When all boilers were due for replacement, one boiler in each room was replaced. The newer boilers are used alone when weather is milder, while the older

boilers are also brought on line during colder weather. Therefore, with persistent cold weather the school is relying on two boilers that have exceeded their expected life. See page 13 in the attached On-Site Insight report which suggests replacing both boilers.

Half of the building complex is heated with steam pipes. The steam condensate collection and return system needs to be replaced per On-Site Insight. The steam system, especially return pipes, needs constant repairs and maintenance due to the aging piping system. Adding virgin water to system due to leaks degrades pipes over time. As of yet, there have been no injuries due to ruptures in the steam delivery system.

The building has no air conditioning, except for the high school and central administration areas, and the computer rooms. This lack of air conditioning leads to extremely uncomfortable learning situations during late spring and June, and at the start of school.

Other systems at or beyond their expected service life or in need of extensive repair include:

- Main heating system (boilers, temperature control, steam plumbing, heat ventilators, etc.)
- Hot water (storage tank, distribution)
- Ventilation/cooling systems (building exhaust fans, rooftop air units)
- All exterior doors, all windows, steeple and balcony, elevator
- Auditorium heating, ventilation and air conditioning system
- Auditorium carpeting and seating
- Science labs (including showers, eyewash stations, ventilation and fume hoods)
- Classroom cabinetry, shelving
- Restrooms and locker rooms
- Exterior walls are not seismically reinforced to conform to current codes.

**Priority 5**

***Question 2: Please describe the measures the district has already taken to mitigate the problem/issues described in Question 1 above.***

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Ongoing emergency repairs are made to protect health and safety. Beyond that, systems have been replaced or upgraded as they fail. In 2013, the district also commissioned a Capital Needs Assessment by On-Site Insight to better inform our planning for future capital allocations necessary for repair and replacement of equipment.

**Building Security**

The district has installed 28 surveillance cameras and four door entrance proximity readers. Doors have been secured by removing exterior handles where exit is the only requirement. This reduces attempts at break-ins.

**Fire Protection and Security**

Alarm panels have been upgraded and an addressable system has been installed in part of the building. Carbon monoxide detectors are being added this summer. The district complies with all state and local requirements on fire protection equipment and systems.

**ADA Compliance**

In the past year, an additional curb cut was installed, along with two handicap parking places, in addition to an adjacent electronic door opener.

**HVAC**

As noted in the previous section, two boilers of four have been replaced in the past five years, as their predecessors were failing. In 2013, a significant renovation of the HVAC system was made to the administrative offices on the sixth floor to reduce energy consumption, stabilize heating and cooling, and improve the circulation of fresh air. This was funded in part by a Green Communities grant from the state. In order to better control the aging HVAC system, a \$100,000 upgrade to the existing Energy Management System is currently being installed. This installation will improve the current situation, but not fix all HVAC problems.

To bring the HVAC system to today's standards, the high school would need an upgraded HVAC system that would cost many millions of dollars.

**Hazardous Materials**

The district contracts with licensed vendors for asbestos abatement as needed.

**Building Structure and Envelope**

Ceiling cracks are repaired as needed. Floor tiles and stair nosings are replaced as needed. After heavy rain and moisture penetrations, the maintenance department performs spot re-pointing on masonry and applies spray-on waterproofing.

**Electrical**

Improvements to the electrical system are completed when necessary and if it is possible to retrofit into existing electrical systems.

**Priority 5**

***Question 3: Please provide a detailed explanation of the impact of the problem/issues described in Question 1 above on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

Deficiencies in the high school heating, electrical and other systems combine to create an increasingly disruptive learning environment. Although staff and students excel at work-arounds and make-dos, the attention and energy these problems cause take away from attention paid to teaching and learning. As reported by the Principal: "There is not a day when administration does not have to spend time on building related issues." In addition, everyday students with mobility challenges experience delays in getting to class. On stormy, windy days, classes are interrupted by teachers and custodians placing buckets in hallways and mopping floors as water gets into the building.

Examples of heating and cooling problems: During the protracted cold spell this winter, teachers and students in several classrooms had to be relocated because of lack of heat in their rooms due to boiler failure or broken controls.

- ┆ In some classrooms it can take 24 hours for the heat to reach the level set by the thermostat, if it achieves that level at all. Other classrooms are overheated, requiring teachers to open windows even on very cold days.
- ┆ The Media Center/ Library is not air conditioned, despite housing technology equipment and being used year-round.

Examples of electrical issues:

- ┆ Wiring capacity and outlet availability frequently constrain technology usage.
- ┆ Classroom teachers using a projector, computer, Elmo document projector and speakers simultaneously trip the electrical circuit.
- ┆ Students regularly trip over extension cords used to power technology equipment on carts, requiring replacement of damaged equipment.

From the HMFH report:

It is clear that due to its age, the complex requires significant upgrades to (or replacement of) all of the building systems and finishes. This is because either they are obsolete, not in working order, and a drain on energy and maintenance resources, or because they simply do not comply with current code standards for accessibility, plumbing fixture quantities, structural implications, or hazardous material abatement.

Beyond the sizes and configurations of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

- ┆ Acoustic needs: many spaces are acoustically challenged, causing disruptions and making learning difficult; the Music program spaces do not have appropriate acoustic treatment; the rooms adjacent to the Cafeteria are interrupted by noise; the Language Lab needs appropriate acoustics. Old Hall is a loud, echo-filled, challenging space to occupy, coupled with the noises clearly heard from the space below used for band practice and wrestling practice.
- ┆ Auditorium sound and lighting systems: the systems are aged and require replacement.
- ┆ Equipment: throughout the various program spaces much of the equipment used by the teaching staff is outdated or does not exist (fume hoods, appliances, etc.)

- l Air conditioning: the school is used year-round and air conditioning is essential and, at minimum, the Library, Auditorium, and Administrative areas should have air conditioning.
- l Borrowed lights and glazing: part of the confusion of the complex is due to the lack of visual connection between spaces.

In addition to there being too few toilet rooms with too few fixtures for the population, the majority of them are located at the very end of hallways, sometimes beyond the paired hall doors and within the stair well. These are not regularly supervised and pose numerous threats and at the very least, maximize insecurities. We understand that due to the physical, deteriorating conditions as well as the isolated locations of the toilet facilities, that there are students who will not use the facilities throughout the entire school day. This is not a healthy situation.

**Priority 5**

***Question 4: Please describe how addressing the school facility systems you identified in Question 1 above will extend the useful life of the facility that is the subject of this SOI and how it will improve your district's educational program.***

The improvements suggested in the On-Site Insight report would replace those elements of the physical plant that are beyond their useful life, and would allow the building to function more appropriately. These improvements will not greatly help the many academic issues in the building, such as outdated science labs, too small and/or poorly configured classrooms, lack of breakout space, etc, as outlined in the Analysis of Programmatic Needs, nor would they address future enrollment pressures.

**Please also provide the following:**

**Have the systems identified above been examined by an engineer or other trained building professional?:**  
YES

**If "YES", please provide the name of the individual and his/her professional affiliation (maximum of 250 characters):**

Mr. Robert Labadini is a Building Performance Institute (BPI)-certified energy auditor, and LEED Green Associate accredited.

**The date of the inspection:** 4/16/2013

**A summary of the findings (maximum of 5000 characters):**

Please see the attached On-Site Insight Green Capital Needs Assessment and Reserve Replacement Analysis report attached.



**Priority 7**

***Question 1: Please provide a detailed description of the programs not currently available due to facility constraints, the state or local requirement for such programs, and the facility limitations precluding the programs from being offered.***

With the advent of the Common Core State Standards and PARCC assessments, access to the benefits of a modern facility become more urgently needed. The limitations of the facility limit the range of experiments in Science classes, access students have to develop their skills in Art, Instrumental Music and Consumer Science and collaboration by students and teachers. Small group work is virtually impossible in an undersized or misshaped classroom. Vitally important is access to modern technology, both for testing and for college and career readiness. The current high school's physical limitations make the roll-out of better technology challenging.

As mentioned in the 'Programs and Operations' section, nearly 100 years of expansion, additions, and re-configurations have resulted in re-purposed and retrofitted classrooms that are forced to fit into a space that is incompatible with today's teaching methods.

Following are some of the programmatic constraints of the facility:

- 1 The Media Center/Library has been divided to accommodate academic support rooms, a music classroom and special education classrooms.
- 1 Many classrooms contain pillars that not only obstruct student and teacher views, but also severely limit accessibility and usable space in the classroom.
- 1 Under-sized classrooms prevent small group collaboration, forcing students to meet in small groups in hallways and stairwells.
- 1 The facility impedes technology implementation, particularly WIFI and ceiling mounted projectors.
- 1 Inadequate wiring and insufficient electrical outlets in classrooms result in frequently tripped circuit breakers.
- 1 Inadequately sized science labs do not provide enough lab workstations for all students to perform experiments safely at the same time.
- 1 Two basement rooms (old Auto Shop and a classroom) are closed due to environmental concerns (PCE). One of these rooms provides the only access to the courtyard garden, thus limiting environmental studies offerings.
- 1 Arlington's state mandated inclusion preschool resides at the high school. The space that it occupies also has limitations, including poor classroom configuration that impedes service delivery and inadequate therapy rooms.

Additionally, from HMFH Analysis of Programmatic Needs report:

Following are the presently known missing and/or inadequate educational spaces:

- 1 Science: additional classrooms and specifically Biology classrooms
- 1 A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space
- 1 Culinary Arts: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- 1 Special Education: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- 1 Music: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- 1 Visual Arts: a dedicated studio arts space
- 1 Physical Education: Health classroom and Dance studio
- 1 School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can

- comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- 1 An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

**Priority 7**

***Question 2: Please describe the measures the district has taken or is planning to take in the immediate future to mitigate the problem(s) described above.***

The District has focused on gathering detailed information from outside evaluators and building users so that it can deeply understand the current state of the building, the particular improvements required and the time frame in which they are needed, as well as the programmatic impacts and limitations of the current high school building. The relevant reports are attached to this SOI and are referred to at length in this document. Key information was gathered during the most recent NEASC accreditation process, which highlighted in particular the detrimental nature of aspects of the facility. Accordingly, HMFH was retained to do a programmatic study. In addition, the District retained On-Site Insight for a Green Capital Needs Assessment and Replacement Reserve Analysis. The District has made all of these reports publicly available on the district website.

The District has created a building committee made up of professional staff, local government representatives, parents and community members. Arlington has strong volunteer participation in local government, allowing a depth of outreach not always easily achieved in other communities. To date, the District has sought input from the Town's Capital Planning Committee, Finance Committee, Permanent Town Building Committee, and Long-Range Planning Committee.

To build awareness about the declining condition of the high school facilities, the District offered in-depth tours of the facility to all members of the School Committee, Board of Selectmen, Capital Planning Committee and Town Finance Committee in December 2013. In March 2014, the District expanded the tours to all residents.

The High School Principal has formed a Faculty Building Committee to help identify and understand the programmatic needs and limitations of the facility, and to start thinking about what improvements the high school can make to take academic performance to the next level.

To address immediate facility cleanliness and minor maintenance issues identified in the NEASC report, the Principal plans to start a Booster Club to raise money for minor improvements (paint) and to solicit help with improving the appearance of portions of the facility (locker rooms, hallways, etc.).

**Priority 7**

***Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.***

Aging facility and mechanical systems, combined with a sprawling complex that has been reconfigured and repurposed numerous times, result in many negative impacts on the educational program and the daily lives of students and teachers. As reported by the Principal, "There is not a day when administration does not have to spend time on building related issues."

**Instruction and Curriculum**

- | Age and construction of facility impedes technology implementation.
- | Classroom obstructions limit the ability of teachers to circulate, and of small groups to collaborate.
- | Wide variances in temperature due to leaky windows and aging boilers are distractions.
- | The complex is large and poses program adjacency and teacher collaboration challenges.
- | Inadequately sized science rooms limit ability to deliver curriculum.
- | The media center/library, auditorium and administrative offices lack air conditioning despite year-round use.
- | Undersized media center/library lacks separate workspaces for small group collaboration.

**Building Security and Safety**

- | Monitoring access to the school's 50 doorways poses a difficult security challenge.
- | Telephones are not available in all classrooms and the public address system is outdated, posing a safety risk in the event of an emergency.
- | Inadequate electrical supply results in frequent overloading of circuits.

**Accessibility**

- | The complex has only one (undersized) elevator which is not centrally located.
- | The auditorium (used for public events) does not provide accessible seating.
- | Under-sized classrooms pose accessibility and safety concerns.

**From the HMFH Report:**

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. In most cases the locations of the various departments are quite removed from one another and therefore it "does not encourage collaboration and support." Additionally, there are minimal spaces that allow for teachers (of similar and dissimilar subjects) to meet and collaborate. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally, the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of

spaces for support services such as guidance and special education.

The school building as configured today, after a century of additions, renovations, and on-the-fly repurposing of spaces, poses a safety and security challenge.

There are greater than 50 exterior doors. This fact alone is a security challenge, but is compounded because none of the doors are tied to a security alarm system, and it is virtually impossible to secure the school building either during or off school hours.

Without classroom telephones, there is “no room-to-room communication.” Due to the lack of a fully integrated public address system, the ability to communicate an emergency situation to the entire school is poor. Similarly, and as it was designed, there are three separate fire alarm systems for the three “separate” buildings, but this means whole areas of the building would not be aware of an emergency in another area of the building. The administration has had to develop procedures for communicating and activating multiple alarms in an emergency.

Many classrooms teachers have resorted to the use of power extension cords that, by their nature, are strung across the floors. The result is that teachers do not use technology as readily and tripping is a hazard to students and equipment. The Science classrooms use equipment and chemicals in crowded conditions, many in rooms without proper safety stations. Ultimately, students are denied the learning experience if the conditions are deemed too unsafe. Gas shut-offs for some science labs are located in the adjoining rooms, making this safety measure less effective.

Beyond the sizes, configurations, and quantities of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

## REQUIRED FORM OF VOTE TO SUBMIT AN SOI

### REQUIRED VOTES

If the SOI is being submitted by a City or Town, a vote in the following form is required from both the City Council/Board of Aldermen **OR** the Board of Selectmen/equivalent governing body **AND** the School Committee.

If the SOI is being submitted by a regional school district, a vote in the following form is required from the Regional School Committee only. FORM OF VOTE Please use the text below to prepare your City's, Town's or District's required vote(s).

### FORM OF VOTE

Please use the text below to prepare your City's, Town's or District's required vote(s).

Resolved: Having convened in an open meeting on \_\_\_\_\_, prior to the closing date, the \_\_\_\_\_ *[City Council/Board of Aldermen, Board of Selectmen/Equivalent Governing Body/School Committee]* of \_\_\_\_\_ *[City/Town]*, in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated \_\_\_\_\_ for the \_\_\_\_\_ *[Name of School]* located at \_\_\_\_\_ *[Address]* which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_; *[Insert a description of the priority(s) checked off on the Statement of Interest Form and a brief description of the deficiency described therein for each priority];* and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the City/Town/Regional School District to filing an application for funding with the Massachusetts School Building Authority.

**CERTIFICATIONS**

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

**Chief Executive Officer \*****School Committee Chair****Superintendent of Schools**

\_\_\_\_\_

\_\_\_\_\_  
(signature)\_\_\_\_\_  
(signature)\_\_\_\_\_  
(signature)\_\_\_\_\_  
Date\_\_\_\_\_  
Date\_\_\_\_\_  
Date

\* Local Chief Executive Officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice. Please do not leave any signature lines blank.



***Arlington Public Schools***  
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***869 Massachusetts Avenue***  
***Arlington, Massachusetts 02476***  
***Telephone 781-316-3511***

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Diane Fisk Johnson, Chief Financial Officer  
djohanson@arlington.k12.ma.us

March 18, 2015

Massachusetts School Building Authority  
40 Broad Street, Suite 500  
Boston, MA 02109

Attn: Statement of Interest

Dear Friends:

Attached please find two versions of the Arlington Public Schools 9 Year Enrollment History and Projected Enrollment reports.

These enrollment projections are based on a five year weighted average, which generates a continuity rate from one grade to the next. To calculate the grade one continuity rate, for example, the formula would be:

$$\{((4 \text{ years ago grade one population} / 5 \text{ years ago grade K population}) \times 1) + ((3 \text{ years ago grade one population} / 4 \text{ years ago grade K population}) \times 2) + ((2 \text{ years ago grade one population} / 3 \text{ years ago grade K population}) \times 3) + ((\text{last year's grade one population} / 2 \text{ years ago grade K population}) \times 4) + ((\text{this year's grade one population} / \text{last year's grade K population}) \times 5)\} / 5 = \text{five year continuity rate.}$$

Using this methodology, and birth data from Town Hall, enrollment projections for the future have been calculated. The two sheets differ in one main respect: The sheet projecting through 2020 shows totals for the entire district, while the sheet projecting through 2029 is redesigned to show the impact of existing student populations on the middle and high schools as they age through the system, and does not assume anything about incoming populations of students not yet born. Both sheets have been included to help explain the current enrollment trends for Arlington as a whole and the potential impact of current trends on the future of our secondary building infrastructure.

If you have any questions about these reports, please do not hesitate to contact me.

Sincerely,

Diane Fisk Johnson  
Chief Financial Officer



9 Year Enrollment History and Projected Enrollment 2016-2020 -by Grade Levels

<u>Year</u>	<b>Births 5-yrs prev</b>	<u>Pre-K</u>	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>Tot</u>	Incr/(Decr) from Prior yr.	% Change
2006-2007	545	84	442	391	386	394	385	357	356	339	347	302	309	301	323	4716	-18	
2007-2008	537	79	409	439	399	384	381	382	337	354	317	316	271	299	292	4659	-57	-1.2%
2008-2009	496	82	456	405	439	387	376	374	369	344	354	296	308	266	300	4756	97	2.1%
2009-2010	558	64	457	451	411	423	387	366	365	373	343	320	295	323	272	4850	94	2.0%
2010-2011	545	60	450	442	435	399	427	367	349	350	365	306	325	296	311	4882	32	0.7%
2011-2012	537	47	434	455	421	426	390	412	355	335	348	308	304	342	299	4876	-6	-0.1%
2012-2013	496	57	453	472	446	420	429	395	379	337	337	322	313	309	354	5023	147	3.0%
2013-2014	558	60	477	478	483	464	434	429	357	393	328	299	320	321	314	5157	134	2.7%
2014-2015	517	65	516	488	466	483	456	433	401	348	376	319	309	324	342	5326	169	3.3%
5 Year Weighted Average Continuity Rate		1 (PK)	0.906 (K)	1.039 (K-1)	0.985 (1-2)	1.006 (2-3)	1.002 (3-4)	0.994 (4-5)	0.929 (5-6)	0.983 (6-7)	0.977 (7-8)	0.918 (8-9)	1.013 (9-10)	1.021 (10-11)	1.032 (11-12)			
Projected 2015-2016	563	65	510	536	481	469	484	453	402	394	340	345	323	316	334	5453	127	2.4%
2016-2017	545	65	494	530	528	483	470	481	421	396	385	312	350	330	326	5571	118	2.2%
2017-2018	597	65	541	513	522	531	485	467	447	414	387	354	316	357	341	5739	168	3.0%
2018-2019	616	65	558	562	506	525	532	481	434	439	405	355	358	323	368	5912	173	3.0%
2019-2020**	600	65	544	580	554	508	526	529	447	426	429	371	359	366	333	6040	127	2.2%

Data as of 10/17/14

\*\*Birth Numbers from Arlington Town Clerk, estimated for 2019-2020

9 Year Enrollment History and Projected Enrollment 2016-2029 -by Grade Levels

Weighted Average

<b>Year</b>	<b>Births 5-yrs prev</b>	<b>Pre-K</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>Middle School</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>High School</b>	Incr/(Decr) from Prior yr.	% Change
2006-2007	545	84	442	391	386	394	385	357	356	339	347	1042	302	309	301	323	1235		
2007-2008	537	79	409	439	399	384	381	382	337	354	317	1008	316	271	299	292	1178	-57	-4.6%
2008-2009	496	82	456	405	439	387	376	374	369	344	354	1067	296	308	266	300	1170	-8	-0.7%
2009-2010	558	64	457	451	411	423	387	366	365	373	343	1081	320	295	323	272	1210	40	3.4%
2010-2011	545	60	450	442	435	399	427	367	349	350	365	1064	306	325	296	311	1238	28	2.3%
2011-2012	537	47	434	455	421	426	390	412	355	335	348	1038	308	304	342	299	1253	15	1.2%
2012-2013	496	57	453	472	446	420	429	395	379	337	337	1053	322	313	309	354	1298	45	3.6%
2013-2014	558	60	477	478	483	464	434	429	357	393	328	1078	299	320	321	314	1254	-44	-3.4%
2014-2015	517	65	516	488	466	483	456	433	401	348	376	1125	319	309	324	342	1294	40	3.2%
5 Year Weighted Average Continuity Rate		1 (PK)	0.906 (K)	1.039 (K-1)	0.985 (1-2)	1.006 (2-3)	1.002 (3-4)	0.994 (4-5)	0.929 (5-6)	0.983 (6-7)	0.977 (7-8)		0.918 (8-9)	1.013 (9-10)	1.021 (10-11)	1.032 (11-12)			
Projected	563																		
2015-2016	545	65	510	536	481	469	484	453	402	394	340	1137	345	323	316	334	1318	24	1.9%
2016-2017	597	65	494	530	528	483	470	481	421	396	385	1202	312	350	330	326	1318	-1	-0.1%
2017-2018	616	65	541	513	522	531	485	467	447	414	387	1247	354	316	357	341	1368	50	3.8%
2018-2019	600	65	558	562	506	525	532	481	434	439	405	1278	355	358	323	368	1405	37	2.7%
2019-2020**		65	544	580	554	508	526	529	447	426	429	1303	371	359	366	333	1430	25	1.8%
Proj beyond births 2020-2021		0	0	565	571	557	510	523	492	440	417	1348	394	376	367	378	1515	85	5.9%
2021-2022		0	0	0	557	575	558	506	486	483	430	1399	382	399	384	379	1545	30	2.0%
2022-2023		0	0	0	0	560	576	555	470	478	472	1421	395	387	408	397	1586	41	2.7%
2023-2024		0	0	0	0	0	561	572	515	463	467	1445	434	400	396	421	1650	64	4.0%
2024-2025		0	0	0	0	0	0	557	532	507	452	1490	429	439	408	408	1684	35	2.1%
2025-2026		0	0	0	0	0	0	0	518	523	495	1536	415	434	449	421	1719	35	2.1%
2026-2027		0	0	0	0	0	0	0	0	509	511		455	420	443	463	1781	62	3.6%
2027-2028		0	0	0	0	0	0	0	0	0	498		469	460	429	458	1816	35	2.0%
2028-2029		0	0	0	0	0	0	0	0	0	0		457	475	470	443	1845	29	1.6%

Data as of 10/17/14



## Arlington High School

### Analysis of Programmatic Needs

Arlington, Massachusetts

February, 2014

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## 1- Introduction

Arlington High School is a large complex (nearly 400,000 square feet) centrally located in the community. Its main façade fronts onto Massachusetts Avenue, set back from the road by a green space with mature trees. At the rear of the complex are several athletic fields (baseball, softball, football, and track and field). The school building has expanded several times since the original 1914 six-story school house. And in the 100 years of its existence general and special education, technology, sustainability, building codes, and accessibility requirements, have all greatly changed and evolved. All of these have an impact on the ability of a facility to function as it is intended and as it needs to, to serve its occupants into the future.

The Town of Arlington has begun to identify the physical plant upgrade requirements through a capital assessment report developed by On-site Insight. This report has identified maintenance upgrades to be made over a 20-year period. The scope identified includes replacement of exterior windows and doors, interior and exterior lighting, and mechanical systems. The scope includes two new elevators and restoration of the clock steeple. The estimated costs for the work identified, in today's dollars, is \$32.4 million. The report notes that it does not include costs for upgrades associated with building code issues or structural changes, nor does it include significant hazardous material abatement. Over a twenty-year period the report identifies flooring upgrades, roof replacement, and locker replacement. The report identifies a through-slab water infiltration problem, but only includes costs to study the problem.

It is clear that due to its age, the complex requires significant upgrades to (or replacement of) all of the building systems and finishes. This is because either they are obsolete, not in working order, and a drain on energy and maintenance resources, or because they simply do not comply with current code standards for accessibility, plumbing fixture quantities, structural implications, or hazardous material abatement. A significant renovation of the facility would require meeting, wherever reasonable, all of the current code requirements. The On-site Insight capital assessment report assumes that the physical plant needs are solved incrementally over two decades. If the Town of Arlington chooses to upgrade the facility in this manner it will likely not trigger a full upgrade per the current code, but it will also not qualify for Massachusetts School Building Authority (MSBA)/ State assistance to help pay for the costs to renovate the high school. The MSBA has historically chosen to invest the State's funds responsibly, after thorough investigation of the facility's needs. The MSBA puts a strong emphasis on school buildings meeting the educational needs of the community. Replacements of the roof, lockers, and mechanical systems will improve the physical plant but will not improve the educational quality of the school.

The goals of this report are two-fold: first, is to establish the educational space conditions and needs of the aging facility; and second, is to inform the completion of the Statement of Interest (SOI) to be submitted to MSBA for consideration to participate in the State's funding assistance program. Through the use of diagrams, first-person stories, and the high school's most recent NEASC (New England Association of Schools and Colleges) report, this report will show how the spaces and configuration of the existing school building are an impediment to effective teaching and learning. It is agreed by all that the systems and finishes are beyond their useful lives and require upgrades, but we will show that it is more than just these that need to be fixed. Ultimately, a feasibility study will be required to identify the building and educational needs, as well as the possible solutions to fulfill these needs so that Arlington High School can proudly serve its community for the coming decades.

## 2- Arlington High School Use and Condition

The high school is nearly 400,000 gross square feet, much larger than the MSBA guidelines would suggest it needs to be, but there are extenuating circumstances that make significant portions of the space unusable by the high school program. The complex comprises multiple buildings of different generations, added onto over the years to accommodate student enrollment and programmatic needs. The buildings include Fusco House (1914),

Collomb House (1937), and Downs House (1960s). Due in part to its size and mostly due to its configuration a higher-than typical portion of the space is taken up by circulation, both in corridors and stairwells. There are 5,740 linear feet of corridor circulation and 20 sets of stairs. See Appendix A for the circulation diagram. Not only does this add to the total size of the building, it is one of the main reasons why it is difficult both to supervise students in the building and it is difficult to create a sense of place and community for the students and faculty. The net-to-gross square foot factor is the total (gross) building square feet divided by the usable (net) program square feet. This ratio is an expression of how much of the building is programmatic rooms versus circulation, toilets, and other support spaces. The high school's net-to-gross is approximately 1.77; a typical ratio for new construction is 1.50. A lower ratio indicates a more efficient building layout.

In comparison to the MSBA guidelines, the high school has 33,900 square feet in use for physical education and athletics, the guidelines would plan for 23,900 square feet for this program only. It is possible to obtain financial assistance to renovate the existing spaces, but it would not be possible to reconstruct the same, large, amount of space that is currently at the high school.

There are other programs that occupy the high school beyond those that serve the high school directly. There are town offices, town's facilities and custodial offices, the town's pre-school program, the school district's administrative offices, and the LABBB Collaborative Program. There are areas of the building that are used as storage space for other services and there is an area that has been deemed off-limits to occupants and is used for storage. The building has many underground spaces and therefore there is no opportunity to provide natural light to these areas. All told the approximate square footage usage is as follows:

Town Use	6,800 SF
School/Town Facilities	4,600 SF
Pre-School Program	16,600 SF
School District Use (includes METCO Program)	16,700 SF
LABBB Collaborative Program	9,900 SF
Community/ School Storage	10,300 SF

For a diagram of these spaces, see Appendix B.

The Feasibility Study phase will need to assess these uses in conjunction with the high school and the town space needs in order to identify the best location for them. When the above programs and the extensive circulation square footage are combined, the net remaining area for the high school program is approximately 207,000 usable square feet.

The complex has just one, antiquated elevator and for a school building of this size, it does not provide adequate and equal accessibility, in that it is not convenient for the intended users and it does not provide access to all of the building's floor levels.

A thorough renovation-only of the facility would include (and in part has been identified in the On-site Insight report):

- Mechanical systems replacement
- \*Electrical system upgrades including an increase to the quantity of power outlets (need to eliminate the extensive use of extension cords)
- Light fixture replacement
- \*Plumbing upgrades and/or replacement, including fully modernized and accessible toilet facilities, and an increase in quantity of locations and fixtures
- \*Solve the water infiltration issue
- \*Security upgrades
- \*Technology upgrades and integration, including wireless service
- \*Audio/visual systems upgrades, including new PA system, simulcast ability, telephones throughout the school, sound systems at Auditorium and Gymnasium, and Auditorium/Stage lighting

- Hazardous material abatement
- Roof replacement
- Exterior door replacement and \*tie-in to the security alarm system
- Exterior window replacement
- Finishes replacement including:
  - flooring (abate and remove remaining vinyl asbestos tile (VAT), replace all with new)
  - \*ceiling treatment (provide with high acoustic and reflectance quality)
  - \*wall surfaces (provide durable protection, paint all)
  - fixed casework (\*include upgrades to plumbing as appropriate)
  - \*teaching surfaces (white-boards and tack-boards)
  - \*auditorium seating (replace and provide accessibility)
  - corridor lockers and athletic lockers
  - \*athletic locker room upgrades
- \*Accessibility upgrades throughout
- Three new elevators

\*Note: these are not included in the scope (or they are minimally included) outlined in the On-site Insight report.

This long list is indicative of the age and condition of the facility and not all items are included in the On-site Insight report. Many school systems throughout the Commonwealth have buildings in just such need, but in the case of Arlington High School, where the facility has historic value, community presence, and serves many essential needs, it is imperative that every effort be made not only to “fix” the building but to bring it to a state where it can meet the community’s and the educational needs for the next 50 years. Arlington has the unique opportunity at this time to thoroughly assess the high school’s needs and to put every resource possible into creating a place for 21<sup>st</sup> century learning from the 20<sup>th</sup> century school-house.

### 3- Educational Program and Space Needs

#### Size and Configuration of School

The high school has been identified as “confusing” by students, faculty, and visitor alike. Even for those that have cause to enter the school on a regular basis, directions are required. The size of the school is generous and therefore has provided opportunities over the years to be useful to meet town space needs, but its size is one of the factors that cause it to be confusing. Furthering the sense of confusion is the configuration; due to the many additions over the years, there are several continuous loop corridors on multiple levels and some portions of the school are one, four, and five levels high. Additionally, there are two floor levels that are half underground, located along the full length of the Massachusetts Avenue façade; this lack of day-light adds to the disorientation.

Should a student have to get from their World Language class on the fifth floor of Fusco over to their Math class at the far end of the Downs Building, they need to all but run (and likely actually run) to reach their next class on time. The length of travel is extensive and at times excessive. Many students pass through the central library space as a cut-through path, which is quite disruptive for those working in the library. It is a given that large buildings will generate longer lengths of travel, but due to the current configuration, there is very little opportunity to restructure the program space layout to create a more condensed circulation path for the student’s school day. For a diagram of the school’s circulation layout, see Appendix A.

The school programs are currently arranged departmentally and, due to the overall size of the facility, some of the programs are at a great distance from one another, creating silos and inhibiting communication and collaboration between the educators. For a diagram of the program layout, see Appendix C. Teaching and learning have changed significantly in the past two decades, let alone the last ten decades, collaboration is essential today. Teachers need to be able to meet to discuss interdisciplinary teaching plans and the students in their charge.

Due to its size and its configuration, great efforts have been made to create a sense of place in Arlington High School, a sense of community. The building does not lend itself to supporting these efforts. The building is confusing at best and does not engender a whole school spirit.

### **Quantity and Quality of Educational Spaces**

Over the years, spaces have been repurposed, re-invented, re-configured, expanded, and divided. Every school year walls are added and taken down; what may have been a right-size classroom one year then becomes two undersized classrooms the next school year. The MSBA guidelines provide for general classrooms sized between 825-950 square feet. Of all the general classrooms in the high school, only 23% meet the minimum of this guideline. Further, the majority of the specialty classrooms do not meet the guidelines. Science rooms are greatly undersized; the average room is 1,000 square feet; per the guidelines the rooms should be 1,440 square feet and this is with an assumed maximum enrollment of 23 students per class; Arlington's Science class size, 40% of science classes exceed 23 students with many classes in the range of 28-30. In the case of the Science program, the undersized rooms are more than crowded, they are unsafe. Science lab experiments require space and free circulation to ensure safe procedures; the high school labs do not have enough space to provide this. The only way to alleviate the overcrowding within the current science classrooms is to provide additional classrooms.

In addition to the undersized spaces causing overcrowding difficulties, there are many classrooms with physical obstructions that hinder the ability of the teachers to teach and the students to learn. There are large columns in six classrooms, another four classrooms have been divided (out of necessity) into irregular shapes, meaning that students cannot see the front marker board and the teacher cannot see some students. A classroom was divided into two, but it is not acoustically separated, making teaching and learning difficult in the two areas. These conditions inhibit different modes of teaching and learning.

As described by one teacher:

The columns create a "challenge." It is because of them that a ceiling-mounted projector cannot be installed and used in her classroom. Therefore she needs to write much more on the white board, having to do and undo information throughout the period. This results in loss of teaching and learning time; she estimates it costs them two to three minutes every class period, this in turn results in 8 - 12 hours per school year.

The obstructed and irregular shaped rooms make up 20% of the teaching spaces. For a diagram showing these spaces, see Appendix C.

The high school is already experiencing overcrowding in the classrooms and it does not have sufficient classrooms for the number of teachers in the building. As the number of teachers is expanded to respond to very large class sizes, it will increasingly be difficult to schedule classes into existing classrooms, some of which are already booked for every period.

Based on a five year weighted average to measure continuity rates from grade to grade, the Arlington Public Schools are anticipating significant space pressure at both the Middle and the High School buildings. Since 2000, the district has grown 24%, from 4,165 to 5,157 students. Much of this growth has been concentrated at the elementary level. Projecting forward in time, using current continuity rates, the High School enrollment of 1,254 is projected to rise to 1,375 in five years, and 1,660 in ten years.

Beyond the sizes, configurations, and quantities of the educational spaces there are environmental issues that make the spaces both uncomfortable and distracting to teach and learn in, such as indoor air quality, temperature extremes and lack of control, and problematic incidences with mice and wasps.

The On-site Insight report does not address any of these space issues.



### Technology and Other Necessary Features

There are many features that are necessary to support high school education, many of which did not exist when the school (and its additions) was constructed. Accessing today's technology is essential for teachers and students. The following are a number of the key education-related and learning-environment related features today's high school requires:

- Ceiling-mounted projectors: the columns in some classrooms do more than disrupt sightlines; they hinder the ability to utilize this essential teaching tool. In addition some ceilings are designed in such a manner that it is not feasible to mount a projector or wire the classroom appropriately for such devices.
- Wireless access: the physical construction of the buildings hinders wireless access and requires a more costly solution to achieve ("block walls, block signals").
- Telephones: for security, telephones are required in every teaching space.
- PA system: the current system is outdated, does not access all of the building, creating a safety risk, and is extremely jarring to the occupants.
- Simulcast ability: the ability to broadcast to multiple areas of the building creates wide-reaching opportunities for learning.
- Sinks and eyewash/ shower stations: a sufficient quantity of sinks, appropriately located, is required for sanitary, safety, and project-based learning; operating eyewash/ shower stations are required at all Science classrooms.
- Flexible, movable furnishings: Science classroom furniture is bolted to the floors creating a rigid and often inappropriate classroom layout.
- Audio/Video space: access to learning and using today's current technologies is essential for the high school student.
- Electrical outlets: an increased access to electrical power is necessary; currently many extension cords and power strips are being used creating unsafe conditions leading to shortages in the system.
- Acoustic needs: many spaces are acoustically challenged, causing disruptions and making learning difficult; the Music program spaces do not have appropriate acoustic treatment; the rooms adjacent to the Cafeteria are interrupted by noise; the Language Lab needs appropriate acoustics. Old Hall is a loud, echo-filled, challenging space to occupy, coupled with the noises clearly heard from the space below used for band practice and wrestling practice.
- Auditorium sound and lighting systems: the systems are aged and require replacement.
- Equipment: throughout the various program spaces much of the equipment used by the teaching staff is outdated or does not exist (fume hoods, appliances, etc.)
- Air conditioning: the school is used year-round and air conditioning is essential and, at minimum, the Library, Auditorium, and Administrative areas should have air conditioning.
- Borrowed lights and glazing: part of the confusion of the complex is due to the lack of visual connection between spaces.

The On-site Insight report does not address any of these education-related features.

### Adjacencies and Size

Adjacency requirements between program spaces and services are often not met, due in part to the generous size and spread-out nature of the facility and also due to not having adequate room in a designated area of the building to accommodate the full program. In most cases the locations of the various departments are quite removed from one another and therefore it "does not encourage collaboration and support." Additionally, there are minimal spaces that allow for teachers (of similar and dissimilar subjects) to meet and collaborate. Even though the intent is for like programs to be grouped together, in several instances, and because of required growth of either or both the program's needs or enrollment, this has not been possible. The Music program is on three different levels, making collaboration and circulation difficult; students travel up and down stairs with their instruments, and stage sets are made in a distant space, un-assembled and then are hauled to the Stage in pieces to be reassembled. The Family and Consumer Sciences program is also spread out on several levels and, ideally,

the program would be adjacent to both the childcare space and the Pre-School program, but with the school's current configuration this is not possible.

In thinking about adjacency needs, we need to also address the needs of differentiated instruction (team teaching, project-based learning, one-on-one instruction, and individual learners). Differentiated instruction requires spaces of varied size as well as adjacencies to the corresponding program. Small-group rooms and break-out spaces allow for differentiated instruction; currently Arlington does not have purposeful smaller teaching spaces to promote flexibility in teaching and learning. As well as the limited large and small group spaces for classrooms, there is also a deficit of spaces for support services such as guidance and special education.

Support services, such as toilet facilities, shared storage rooms and faculty workrooms are few and far between, which has a significant impact in a building of this size. Per the Massachusetts Plumbing Code, the current number of occupants at the high school would require the following toilet facilities, properly distributed per floor: male students = seven toilets plus seven urinals; female students = 20 toilets; adult males = four toilets, adult females = five toilets. Separate toilet facilities are required at the Auditorium equal to five toilets plus five urinals for males and 15 toilets for females. Similarly, separate facilities are required at the Gymnasium equal to seven toilets plus seven urinals for males and 20 toilets for females. Therefore, per the Code, the total fixture count would be: 23 male toilets, 19 male urinals, and 60 female toilets. (This calculation does not include the facilities that are also required at the Nurse, Administration, Pre-School, and Daycare areas.) Currently there are 24 male toilets, 29 male urinals, and 28 female toilets. Based on the current school population, the facility is greatly deficient and this does not include the anticipated increase in enrollment.

Additionally, student services such as guidance, social work, METCO, and administrative oversight, would benefit from an analysis identifying their best locations. In some instances they need to be readily accessible throughout the building while in others, for privacy and comfort, need to be a bit more tucked away.

The location of spaces is not so easily solvable as to just relocate programs; each program has specific spatial requirements (size, features, etc.), and as it is, many of the current spaces are used for multiple programs and do not provide the necessary features, and therefore the whole of the programmatic needs will need to be assessed and addressed in the future Feasibility Study.

The On-site Insight report does not address any of the program adjacency and room size needs.

### **Program Space Needs**

In the above text we have identified existing space deficits, including size, quantity, configuration, obstructions, technology and other necessary features, and location within the school building, what have not been identified are the additional educational spaces required (others desired) to continue to allow Arlington High School to achieve excellent academic results.

Following are the presently known missing and/or inadequate educational spaces, the Feasibility Study process will result in a comprehensive understanding of the needs.

- Science requires: additional classrooms and specifically Biology classrooms
- A flexible modern library "learning commons" to serve as central meeting, collaboration, study, support, and presentation space.
- Culinary Arts requires: additional instruction space and lab space, and increased size to the current Family and Consumer Science (FACS) rooms
- Special Education requires: Occupational Therapy, Physical Therapy, and Speech & Language dedicated spaces and more secure counseling spaces
- Music requires: a dedicated Instrumental Music classroom adjacent to the rest of the music program, Auditorium/Stage need wing space, fly space, and orchestra pit, and scene shop adjacency
- Visual Arts: a dedicated studio arts space
- Physical Education requires: Health classroom and Dance studio (and desires a Swimming Pool for both the athletics department and for wider community use)

- School-wide: meeting rooms, collaboration spaces, and small group rooms, there are no meeting spaces that can comfortably accommodate the faculty or large groups of students for collaborative work; an outdoor classroom
- An adequate Cafeteria that is easily able to be supervised and will accommodate the increased enrollment

The On-site Insight report does not address any of these additional educational space needs.

## 4- Security and Safety

The school building as configured today, after a century of additions, renovations, and on-the-fly repurposing of spaces, poses a safety and security challenge. From the principal:

While Arlington High School remains a safe environment that is primarily because of the nature of our student body and the vigilance of administration. The problems created for monitoring access to the building and supervising “attractive nuisance” spaces in the building create a burden on administration and a distraction to many students.

There are greater than 50 exterior doors. This fact alone is a security challenge, but is compounded because none of the doors are tied to a security alarm system, and it is virtually impossible to secure the school building either during or off school hours. It is common knowledge that students can use a rock or whatever is available to prop open doors for their return either later that night or over the weekend. Further, those that wish to do harm could get into the building to do so. There are long stretches of hallway without occupied spaces and therefore without supervision. There are 20 stairwells, the majority of which are rarely used, that are known hang-out/hiding place for students. Even in stairs that are used regularly, students can hang-out at the very top or very bottom without detection. See safety/security issues diagram in Appendix D.

Currently it is a challenge to have a timely and efficient lockdown or shelter in place of the school.

Due to the configuration of the school complex, there are no orientation mechanisms and it is easy to become lost and disoriented; it is sometimes a challenge to find the best egress path and in an emergency this could be dangerous. There are many, seemingly, dead-end hallways. Although there are no actual dead ends, many hallways seem as if they are, and pose a danger in an emergency.

In addition to there being too few toilet rooms with too few fixtures for the population, the majority of them are located at the very end of hallways, sometimes beyond the paired hall doors and within the stair well. These are not regularly supervised and pose numerous threats and at the very least, maximize insecurities. We understand that due to the physical, deteriorating conditions as well as the isolated locations of the toilet facilities, that there are students who will not use the facilities throughout the entire school day. This is not a healthy situation.

There are too many isolated, unsecure areas at Arlington High School.

Within the classrooms there are dangers and security risks as well. All of the classrooms that have been identified to have poor sightlines between teacher and student (because of columns or irregular shaped rooms) pose a risk. The Library, which is irregular in shape, has multiple columns, and multiple entry and egress points; there is simply no way for adults to monitor the entire space. This is also true for the Cafeteria. The Cafeteria forms a large “U” shape and is obstructed in the middle. The bottom of the “U” has open archways that provide unobstructed access to and from the rest of the building.

During lunch periods, monitors have to be stationed to see as much of the space at once as is possible. Additionally, while the Cafeteria is centrally located within the school, it is on a floor level that, beyond the lunch

periods, has low traffic patterns with no staff adjacent, and students can linger undetected unless staff are assigned to sweep through and supervise.

Without classroom telephones, there is “no room-to-room communication.” Due to the lack of a fully integrated public address system, the ability to communicate an emergency situation to the entire school is poor. Similarly, and as it was designed, there are three separate fire alarm systems for the three “separate” buildings (they are deemed separate per the construction of fire separation walls), but this means whole areas of the building would not be aware of an emergency in another area of the building. The school administration has had to develop procedures for communicating and activating multiple alarms in an emergency.

Many classrooms teachers have resorted to the use of power extension cords that, by their nature, are strung across the floors. The result is that teachers do not use technology as readily and tripping is a hazard to students and equipment. The Science classrooms use equipment and chemicals in crowded conditions, many in rooms without proper safety stations. Ultimately, students are denied the learning experience if the conditions are deemed too unsafe. Gas shut-offs for some science labs are located in the adjoining rooms, making this safety measure less effective. Accident rates in science labs have been directly associated to both crowding and class size. However, without additional and larger labs, Arlington High School is unable to reduce the class sizes further.

None of the items identified in this section of the report would be remedied if only the On-site Insight report’s level of maintenance work were to be done.

## 5- The Future

Arlington High School was constructed for a different time in education than what is expected today, let alone what will be required into the foreseeable future. 21<sup>st</sup> century schools are all about technology, interconnectedness, collaboration, interaction, hands-on learning and making, experiences, teamwork, and interpersonal skills. The excellent teaching staff at the high school knows this and accomplishes much within the constraints of the antiquated facility. It is time to look to the future and to make every effort to create an environment that supports the dynamic teaching and at Arlington High School.

School buildings need clear way-finding and be navigable by all, student and visitor alike. Schools need to have spaces in a variety of sizes that are adjacent to one another to provide appropriate space for differentiated learning styles. The spaces need to be flexible in terms of variety of sizes, and a level of consistency among the amenities. The teaching spaces need to be supported by today’s teaching tools, such as ceiling projectors, wireless, and the like. Schools must achieve these goals in an environment that is at the same time, inviting, open, secure, and supervised.

When thinking of any building today, but perhaps most especially buildings used for educating students, we need to be planning sustainably, using our existing resources wisely, and thinking even further into the future about what else may need to be accommodated on the high school site. Designing sustainably means with the outdoor, as well as the indoor, environment in mind, while creating a long-lasting, low-maintenance, well-planned facility to accommodate flexibility and growth.

Schools need to be safe and secure havens for all that enter. Simple things like signage, color, exposure to natural light, connection through views to nature and the surroundings, combine to create a secure, understandable environment in which today’s and tomorrow’s student learn and grow. These are possible to achieve within a thorough, thoughtful renovation, but they need to be planned for and supported by the community’s resources in order for the high school to best support the youth of Arlington into the coming decades.

## 6- Third Party Validation of Needs

The New England Association of Schools and Colleges (NEASC) has placed Arlington High School on “warning” status for its accreditation. NEASC cites the following concerns:

- “Poor condition of the facility limits staff’s ability to implement curriculum”
- “Insufficient number, size and layout of classrooms”
- “Insufficient size and poor design of science labs”
- “Crowding in science labs creating hazardous conditions”
- “Need for increased availability of a full range of technology”
- “Closure of a classroom due to environmental concerns”

The full report is available to the public for review.

The Department of Elementary and Secondary Education (DESE) is requiring particular data collection format and submission methods from the district and Arlington is unable to meet the requirements due to the high school’s inability to incorporate infrastructure and technology upgrades throughout the school. This inability is due to the physical construction of the existing school, the walls are mainly of concrete block and in many locations it has been difficult and costly to upgrade the infrastructure.

## 7- SOI and Funding

This report along with information from the high school faculty and staff, the school district administration, the Town’s facilities manager, the On-site Insight report, the NEASC report, and other material will be used to respond to the MSBA Statement of Interest (SOI) thoroughly. The SOI will address the following aspects of the facility’s needs:

- “elimination of existing overcrowding”
- “prevention of loss of accreditation”
- “prevention of future overcrowding”
- “replacement or renovation of systems to increase energy conservation”
- “replacement of, or addition to, obsolete buildings to provide a full range of programs”

### SOI Summary

The following issues are of major concern for Arlington High School:

- Major heating, ventilation, electrical, fire detection, and plumbing systems need to be replaced
- All other building systems are antiquated and energy inefficient
- No air conditioning and therefore unable to accommodate summer programs
- Hazardous material abatement
- Proper exterior wall insulation
- Toilet room quantity, locations, and condition are inadequate; fixtures are antiquated
- Poorly functioning drinking fountains
- Electrical system is not adequate to support the technology needs
- Windows are single-pane, energy inefficient with clouded glazing and poor operability
- Minimal access for the physically handicapped; only one elevator that does not reach one of the floor levels and is in need of replacement; one elevator is not adequate for this size facility
- Poor roof condition
- Worn flooring throughout
- Inadequate Science facilities
- The Library is irregular shaped with many obstructions making it a difficult space to supervise

- Undersized Instrumental Music Room that is acoustically inadequate
- Cafeteria is at capacity now, the projected increase in enrollment will require and increase to four lunch periods
- Antiquated PA system that does not reach everywhere
- No telephones for teacher use in an emergency
- Most existing conditions do not meet the Massachusetts Architectural Access Board requirements, such as stair risers, hand- and guardrails, hardware, plumbing fixtures, casework, Auditorium seating, etc.
- Current overcrowding
- Future expected overcrowding

### **Funding**

Ultimately a Feasibility Study will need to be completed to fully understand the construction costs and project costs for the scope of work that is required to renovate Arlington High School and improve the educational spaces and overall environment of the facility. Prior to the Feasibility Study phase and working with MSBA, the Town of Arlington will need to establish an approximate scope and budget within which to plan for the pending project costs. The actual costs will not be finalized until after Feasibility Study and Schematic Design phases are complete and the Town signs its Project Funding Agreement with MSBA, at which time the Town will know its exact share of the costs.

In an effort to put rough cost numbers to the level of work outlined above, we offer comparison statistics:

A review of MSBA past high school renovation and addition project construction costs reveal the average cost per square foot for construction-only, excluding the extreme high and low end projects, is \$198. (Please note: we do not have detailed knowledge of the extent of the work completed for these projects.) To this, add a rough mark-up of 20% for soft costs (all the costs required that are not part of the actual construction), the average project cost is \$238 per square foot. The MSBA projects were bid between 2009 and 2013. Assuming the mean year was 2011 and if the Arlington High School were to bid mid-year 2016 and using an average yearly escalation factor of 3%, the project cost is \$276 per square foot. Based on the size of the existing school, the project cost would be approximately \$100M.

As a second check, we compared the recently completed Cambridge Rindge and Latin School, a renovation of a similar size high school. The scope of work included many similar items to those needed in Arlington, but with minimal reconfiguration of spaces. The project was completed in 2011 with \$238 cost per square foot. Assuming Arlington High School project would be complete by 2018, and adding the yearly escalation to the project cost, the cost per square foot would \$293. Based on the size of the existing school, the project cost would be approximately \$110M.

There are many factors that are unknown at this early stage. Project costs could range from \$90M to \$130M, or even higher. Until the true investigative work is completed in the Feasibility Study process, we will not know the exact scope and therefore the exact costs. But what we can ascertain from the information on the MSBA website and the information in this Analysis report is that the work required to restore Arlington High School to take on the challenge of 21<sup>st</sup> century learning within a facility that meets today's requirements, operates efficiently, and is a welcoming, safe environment, will surely be greater than \$32.4M.

If Arlington's reimbursement factor of approximately 52% were to be applied to a \$130M project cost, the Town's share would be approximately \$62,400,000. While this is a substantial sum, it would encompass all of the foreseeable needs of the high school facility. The alternative is to spend the sum (it too is a substantial sum) proposed in the On-site Insight report but achieve very little.

## **8- Conclusion**

In conclusion, beyond the physical deterioration and aged condition, the school is inadequate to meet the current and future educational needs. Meeting accessibility and other standard code requirements are essential upgrades that are not fully covered in the maintenance assessment by On-site Insight. Physical constraints of size, location, and amenities continue to create barriers to teaching and learning. Safety concerns due to the school's layout and configuration are of mounting concern.

The teaching and learning environments are restricted by overcrowding, inappropriate number and/or sizes of rooms required for the particular task; and rooms of irregular shapes and interrupted by columns that create obstructed views, inhibit learning and cause safety concerns. Science rooms are inadequate size creating cramped conditions, and feature obstructed views that cause an unsafe environment. The general sprawl of the multi-generational, multi-level complex creates confusion, discomfort, safety and security concerns.

The school Principal simply stated, the school has "inadequate instructional spaces," is in need of improved and expanded specialty spaces, has "technology challenges," "impedes innovative, teaming, or collaborative teaching," and is "unsupervisable." He notes that the current quality of programming is due, in large part to the excellent instructional staff. As the economy improves and surrounding communities restore the quality of their facilities and equivalent, Arlington High School will need to restore its school in order to attract and keep its first-class faculty and programs.

The Town of Arlington has the opportunity now to make the substantive improvements to the facility and its educational spaces to appropriately accommodate future generations of learners.

# Green Capital Needs Assessment and Replacement Reserve Analysis

Prepared for:

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Arlington High School  
Arlington, MA

August 18, 2013

*Preliminary Report*



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## HOW TO READ THIS REPORT

The report is divided into two sections: "Findings and Recommendations" and "Supporting Data".

*Findings and Recommendations:* The three elements comprising this section constitute the main content of the report. A comprehensive list of the recommended green options and their benefits, and a snapshot of key energy findings, are included in the Executive Summary. Additional detail regarding the property's existing conditions, current and future capital needs, and green recommendations are illustrated in the narrative and photo pages.

*Supporting Data:* These nine sections contain the support data and calculations used in determining the feasibility of the green recommendations. Hard costs estimates and replacement/repair timing are presented in the capital needs worksheets. The Capital Needs Summaries and Replacement Reserve Analyses highlight the total 20-year capital costs for both the conventional and green scenarios pitted against current funding circumstances. Cost-benefit analyses are included in the Simple Payback and Life Cycle Cost "cut sheets" at the end of the report.

# Executive Summary

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## Overview and Goals

This Green Capital Needs Assessment (GCNA) has been undertaken on behalf of The Town of Arlington School Department. It is aimed at determining the development's current and prospective physical circumstances, on both a traditional and green basis. A traditional CNA focuses on those capital activities that reasonably can be expected to ensure that a property is viable and in good condition over a twenty-year horizon. In a traditional CNA, it is common for On-Site Insight (OSI) to informally comment on maintenance practices, or suggest discretionary upgrades that might affect operations, marketability, or occupant well being. This GCNA is aimed at more rigorously and more formally identifying green alternatives to conventional replacement of major components and systems. It offers options aimed at helping:

- improve energy and water efficiency,
- reduce operating and capital costs through the use of durable materials and improved maintenance,
- safeguard indoor environmental quality (IEQ) for residents, and
- reduce the property's environmental impact.

We see a number of sensible green opportunities, now and in the future, to replace existing elements with more durable and/or environmentally friendly materials and technology. In both the narrative and detailed capital needs worksheets that follow, conventional and green capital activities are presented in parallel. Capital needs summaries are presented separately for conventional and green models. The green opportunities described in the plan fall into one of two categories: energy and water conservation measures (EWCs), or green measures (GMs), expanded in detail below:

# Executive Summary

## **Energy and Water Conservation Measures (EWCMs):**

In the report, 13 energy and water conservation measures (EWCMs) are identified. Energy and water conservation measures are upgrades and improvements to existing mechanical and electrical systems that have a direct impact on energy consumption, and therefore potential utility (electric, gas, oil, water, sewer) savings if implemented appropriately. As part of the inspection process, the property's utility data was analyzed. This information is then used as part of the EWCM recommendation and calculation process.

Certain EWCMs are interactive. In order to achieve the projected annual energy savings for an interactive group, the EWCMs must be implemented in concert with one another. If any of the interactive EWCMs are deferred or foregone, there may be a significant impact on the utility savings outlook. For example, replacement of an inefficient boiler system may not achieve projected utility savings associated with that system if inefficient windows remain in place.

The energy conservation measure specifications (i.e. boiler efficiencies, R-values, U-values) presented in this plan are mostly derived from the International Energy Code and the American Society of Heating, Refrigeration and Air-Conditioning (ASHRAE) Handbook. These measures represent one conceptual option; various alternatives may yield different results. It must be noted that a number of factors may affect the estimated annual energy savings and simple payback periods, and therefore the figures outlined in this report are not guaranteed.

Due to the towns practice of combining overall water usage and costs, Arlington High School's specific water consumption could not be calculated and therefore water saving options could not be analyzed. It is suggested that wherever low-flow and water saving devices are installed the school and the Town will see significant reductions in water consumption.

# Executive Summary

## **Green Measures (GMs):**

The report identifies 3 Green Measures (GMs). Green measures are replacements of existing materials and systems that do not have a direct impact on energy consumption; however, they represent opportunities to reduce capital and operational expenditures in the future due to increased durability, enhanced performance, and increased expected useful life (EUL) potential. Additionally, if implemented properly, GMs can improve indoor environmental quality and can benefit resident and staff health, safety, and well-being.

The life cycle costs for the GMs are calculated in the attached worksheets with the comparative life cycle cost for the conventional replacement alternatives. Other GMs included in the plan do not represent enhanced performance or extended expected useful lives, and therefore the life cycle costs for these GMs are not calculated. Many of the projected savings are based on certain performance and EUL criteria for the respective systems and materials. Several factors may impede upon the expected performance and may skew the estimated savings. In this case, the savings presented in the plan are estimated and cannot be guaranteed.

## **Building Modeling Methodology**

This report uses an energy model created in TREAT to determine the energy loads (electric and fossil fuel uses including heating, domestic hot water, and non-heating systems) for this property. The TREAT model is based on building-specific construction, HVAC systems, and other building systems (i.e. lighting, appliances, etc.) as identified by the inspection team. The energy model also incorporates 12 months of utility bills, and matches weather data to the utility billing period.

Using the SUNREL™ energy simulation software developed by the National Renewable Energy Laboratory (NREL), TREAT calculates energy uses on an hourly basis (again factoring in weather/climate, existing HVAC systems, and internal gains) for an entire year. The result produces calculated energy use for the property, and proposed energy savings for identified measures. The energy savings are shown both independently and with full interaction of all measures.

# Executive Summary

Additional measures such as water usage, which is currently not modeled in TREAT, have been presented using OSI's existing utility models. Also, since TREAT evaluates the building as a whole, it is possible that measures reduce electric consumption, could also show an increase in heating requirements (i.e. lighting reduction reduces heat typically produced by the original lighting system and in turn would require an increase to the heating load). The calculated loads (electricity, natural gas) are reconciled against billed utility loads within a 10% margin.

## A Note on NPV

Net present value (NPV) is the difference in total life cycle costs between the conventional recommendation and the green recommendation. The EWCMs and GMs that carry a negative NPV are viewed as cost-prohibitive, despite potential environmental benefits or additional energy savings. In this report, OSI does not recommend measures that carry a negative NPV.

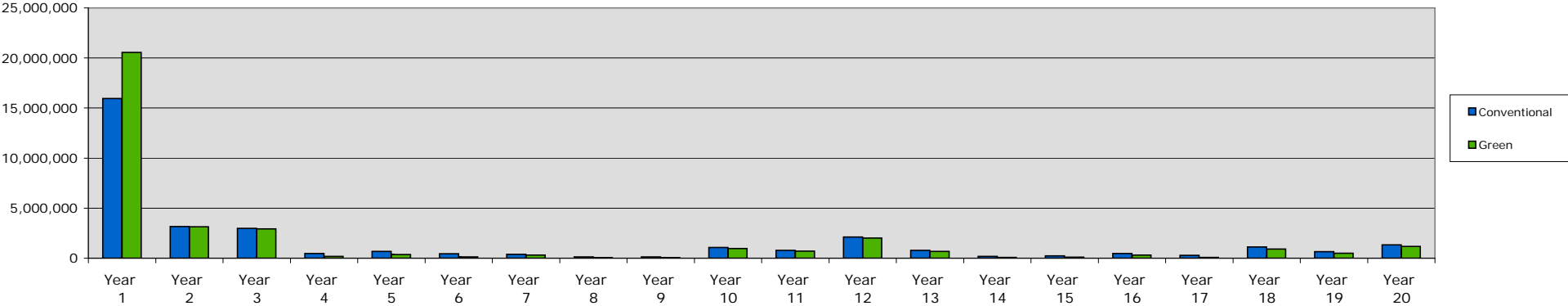
# Executive Summary

## Dashboard

### Property Data

Location:	Arlington, MA
Year Built:	1913
Number of Buildings:	1 (Sections differ in age)

Comparison of Capital Needs - Conventional vs. Green



### Environmental Impact

(Total Carbon Release Based on Current Annual Energy Usage)

Building Square Footage:	367,632
Resident Population (estimated):	1,700

	BTUs/yr	Conversion	lbs CO <sub>2</sub>	lbs CO <sub>2</sub> / Res
Gas	41,474,900,000	x 11.023100	4,571,820	2,689
Oil	0	x 11.023100	0	0
Electricity	5,292,585,216	x 1.582917	2,454,651	1,444
Total	46,767,485,216		7,026,471	4,133

### Replacement Reserve Analysis

#### Conventional

Total Conventional 20-Year costs are \$30,369,828 in uninflated dollars

#### Green

Total Green 20-Year costs are \$32,905,272 in uninflated dollars

### Health and Safety

#### Hazardous Materials

	Identified	Location / Notes
Lead Based Paint (LBP):	None	Not Tested
Asbestos Containing Materials (ACMs):	None	Not Tested
Mold:	None	Not Tested

#### Indoor Ventilation

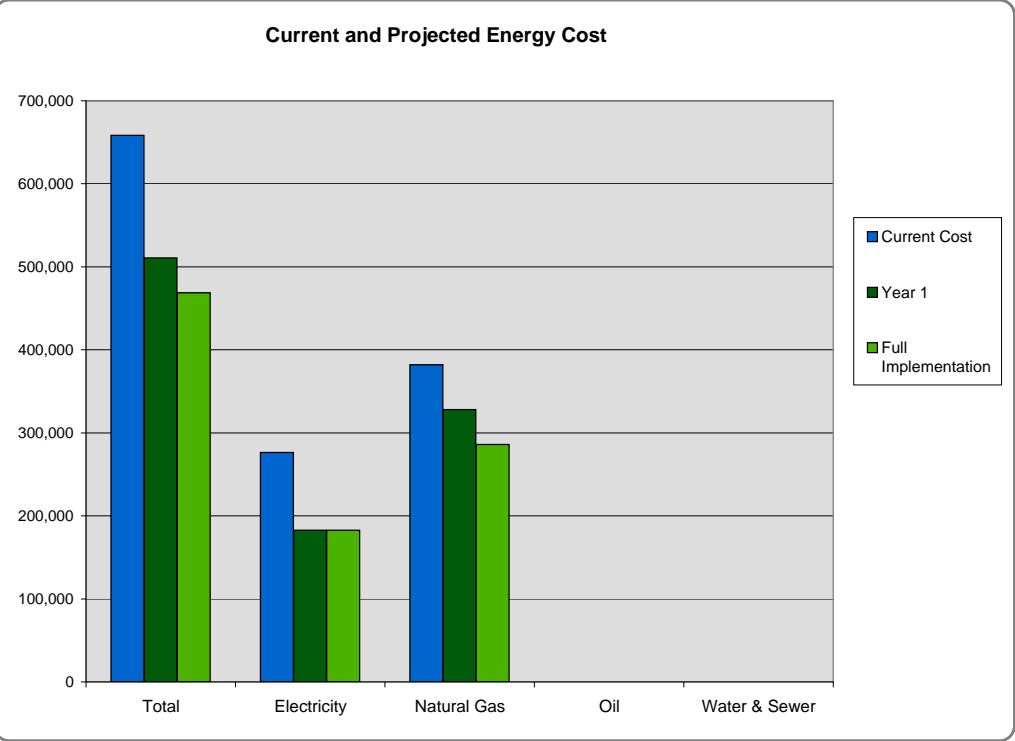
Classroom ventilators, Roof Ventilators

#### Indoor Air Quality (IAQ)

	Design Specification	Actual Read	Notes
Air Flow Rate	0	0	Not tested
Thermal Comfort	72-76	78	Bidg not in operation
Carbon Monoxide	0	0	Not tested
Carbon Dioxide	<1000	<900	

# Executive Summary

## Energy Savings



### Energy Intensity / Benchmarking Data

#### TREAT Modeled Data

Building Square Footage: **367,632**

Heating Degree Days: 5,674

#### TREAT Model

	Amount	Units	BTUs/yr	Energy Intensity (BTUs/(HDDs x SF))
Heating	372,428	therms	37,242,841,273	18
Cooling	0	kWh	0	0
DHW	70,367	therms	7,036,689,801	3
Electricity	1,551,168	kWh	5,292,585,216	3
<b>Total</b>			<b>49,572,116,290</b>	<b>24</b>

	Gallons/yr	Gallons/sf/yr
Water	0	0

### Energy Usage Summary

#### Billing Data

Utility	Current Usage	Current Cost	Projected Usage	Projected Cost	% Savings
Electricity	1,551,168 kWh	\$276,435	1,025,234 kWh	\$182,708	33.9%
Natural Gas	414,749 therms	\$381,889	310,458 therms	\$285,861	25.1%
Oil	0 gallons	\$0	0 gallons	\$0	n/a
Water & Sewer	0 gallons	\$0	0 gallons	\$0	n/a
<b>Total</b>		<b>\$658,324</b>		<b>\$468,569</b>	<b>28.8%</b>

# Executive Summary

## Green Improvement Plan

						Annual Utility Savings									
Measure	Upfront Cost	EUL	Simple SIR <sup>1</sup>	Incremental Cost <sup>2</sup>	Green NPV <sup>4</sup>	Electric		Gas		Oil		Water & Sewer		Total	Recommended Timing
						KWh	\$	Therms	\$	Gallons	\$	Gallons	\$	\$	

### Recommended EWCMs (Based on Financial Analysis)

<b>Interactive Group</b>														
EWCM 2 Heating System Upgd	1,126,735	40	0.72	531,735	278,430			22,015	20,271				20,271	Immediate
EWCM 2A Heating System Upgd	1,176,000	40	0.00	421,000	9,357			17,781	16,372					
EWCM 3 Heating Control Upgd	650,000	15	0.50	129,340	13,979			23,519	21,655				21,655	Immediate
EWCM 8 Gym/Locker Ventilators	180,000	50	1.94	90,000	47,006			7,599	6,997				6,997	Immediate
EWCM 9 Roof Makeup Air Units	200,000	20	0.42	50,000	6,014			4,598	4,234				4,234	Immediate
EWCM 12 Windows	2,808,000	35	0.09	257,400	20,750			8,102	7,460				7,460	Immediate
EWCM 13 Interior Lighting	1,000,000	20	1.59	250,000	930,297	452,528	80,645	(1,080)	(995)				79,651	Immediate
<b>Interactive Group Total <sup>5</sup></b>	<b>7,140,735</b>			<b>1,729,475</b>			<b>79,523</b>		<b>70,343</b>				<b>149,866</b>	
EWCM 1 Exterior Lighting	51,250	20	3.27	6,250	117,931	47,029	8,381						8,381	Immediate
EWCM 4 Circulation Pumps	31,200	20	1.48	8,360	22,099	12,918	2,302						2,302	Immediate
EWCM 5 DHW Boiler Upgd	31,000	20	16.57	11,000	328,824			27,895	25,685				25,685	Future
EWCM 7 Upgrade Split Syst ACs	13,500	20	0.92	2,000	963	3,494	623						623	Immediate
EWCM 10 Roof Exhaust Fans	58,500	20	0.99	19,500	18,846	16,264	2,898						2,898	Immediate
<b>EWCM Subtotal</b>	<b>7,326,185</b>			<b>1,776,585</b>		<b>79,705</b>	<b>93,727</b>	<b>27,895</b>	<b>96,028</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>189,755</b>

### Recommended GMs (Based on Financial Analysis)

GM 1 DHW Storage Tanks	30,000	25		13,534	1,698	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Immediate
GM 2 Upgrade Resilient Flooring	625,261	25		144,291	40,536	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Immediate
<b>GM Subtotal</b>	<b>655,261</b>			<b>157,825</b>		<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	
<b>Total</b>	<b>7,981,446</b>			<b>1,934,410</b>		<b>79,705</b>	<b>93,727</b>	<b>27,895</b>	<b>96,028</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>189,755</b>

### Optional Actions

EWCM 6 CI Rm Ventilators	2,250,000	20	0.57	1,000,000	(158,704)	(171,247)	(30,518)	102,206	94,108				63,590	Immediate
EWCM 11 Exterior Doors	238,000	45	0.01	68,000	(54,445)			52	48				48	Immediate
GM 3 Upgrade Carpet	123,030	10	0.00	24,606	(24,606)								0	Immediate

### Notes:

1. Simple SIR is calculated as (Total Annual Savings \* Estimated Useful Life) / Upfront Cost.
2. Incremental Cost is the difference in cost between the green and conventional alternatives.
3. Green SIR (Savings to Investment Ratio) is a relative measure that reflects the ratio of total savings to total investment of Green vs. Conventional. Unlike Simple SIR, this calculation takes into account maintenance costs, inflation, discounting, and differences in expected useful life.
4. Green NPV is the net present value of installing a green vs. conventional product.
5. Interactive group total recognizes full interaction of all measures based on the TREAT model.



## Narrative

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**Arlington High School**, located at 869 Massachusetts Avenue in Arlington, MA, is a sprawling facility that was built in several stages. The original buildings date to 1913-14 and are referred to as the Old Buildings (buildings "A" & "B"). These buildings retain historic details common in that era; specifically a tall clock steeple, columned classical entry façade, and slate roof. The so called Freshman Building was added in the early 1960s. During the 1980s all of the buildings were connected to form a large interior courtyard. The buildings are predominantly brick masonry. The exception is the connector section that was constructed with a concrete masonry block façade. The interior areas are functional but dated. Most of the high school's fixtures and components are at or approaching the end of their useful service life. The facility is seen as having substantive capital needs in the coming years.

Please note that items that do not provide a positive net present value (NPV) when a life cycle cost analysis is performed are shown as Optional.

## Site & Handicap Accessibility

### Site Surface

The site features several asphalt-paved parking lots and a similarly paved access roadway, concrete, asphalt, and brick paved walkways, surrounding landscaping, pole-mounted high intensity discharge (HID) lighting, and chain link perimeter fence.

The athletic complex and fields are not included within this report.

No capital costs are carried for landscaping improvements, as they are understood to be handled from operations. If, at some future date, the School Department contemplates re-landscaping, OSI recommends attention to sustainable design. Conventional landscaping relies on large lawns, non-native species, extensive irrigation, and heavy use of fertilizers and pesticides. This type of landscaping also tends to be labor-intensive. There are design features that can enhance soil quality, reduce storm water run-off and pollution, and encourage beneficial insects and wildlife. Such measures can also minimize water usage, maintenance costs, and green waste.

## Narrative

As part of this assessment, the facility was examined for compliance with the requirements of the Uniform Federal Accessibility Standards (UFAS). The high school is partially compliant with UFAS, however, deficiencies were noted at several locations. Costs for handicap accessibility modifications and/or improvements at these locations are shown in Year 1 unless otherwise noted.

The hallways, classrooms, and support areas conform to accessibility requirements for accessible routes and clearances. However, it was observed that the restrooms and locker rooms will need to be upgraded to meet current standards. Additionally there is one elevator, located in the older Building "A" section that provides access to all floors. This makes it difficult for mobility challenged individuals to expeditiously access all areas of the high school. Two additional elevators are proposed to provide easier access through out the high school.

### Roadways and Parking Areas

Asphalt paved access roadways and parking areas were observed around the facility. Pedestrian walkways are a mix of concrete and asphalt paving. Chain link safety fencing exists adjacent to the auditorium and chain link security was observed along the east access to the lower parking area. Adjacent to the Child Development section of the facility is a playground area with various pieces of play equipment and enclosed by an aluminum picket fence. Site lighting is provided by pole mounted high intensity discharge (HID) and light emitting diode (LED) fixtures.

Existing conditions	Capital needs	Green alternative
Roadway and parking area asphalt surfaces were observed to be in fair to poor condition. Cracked and broken sections were noted throughout.	Resurfacing and repair costs are shown in two phases. Half in Year 1 and half in Year 11.	Repave the existing asphalt with a lighter colored asphalt material. The lighter asphalt material decreases heat retention associated with darker asphalt materials and therefore reduces the heat island effect and allows for

## Narrative

Existing conditions	Capital needs	Green alternative
Future asphalt surface maintenance.	Allowances are shown in years 1 and 11 for partial cycles of surface maintenance and in Years 6 and 16 for full cycles.	a cooler, more comfortable site for the residents and visitors alike. Typically, lighter-colored asphalt paving is not more expensive than dark asphalt materials, and therefore, no premium is carried in the plan for this work.
Concrete, asphalt, and small sections of brick surfaces. Fair to poor conditions were noted.	Allowances for major repairs are shown twice in the report at fifty percent of the total area per cycle.	No Green alternative is suggested.
The chain link fencing has exceeded its service life; many sections are damaged or badly rusted through.	Costs to replace all the fencing are shown starting in Year 3.  The aluminum picket fencing enclosing the playground area is in good condition; no capital costs are anticipated for it.	No Green alternative is suggested.
The playground area and play equipment has exceeded its expected service life.	An allowance to upgrade/replace the equipment and play surface are shown in Year 1.	No Green alternative is suggested.

## Narrative

Existing conditions	Capital needs	Green alternative
The new LED fixtures are in good condition. The older HID fixtures have exceeded their service life.	Future replacement costs for the LED fixtures are shown in Year 18. Costs to replace the HID fixtures are shown starting in Year 1.	<b>(EWCM 1)</b> Replace all HID fixtures with long life, efficient LED fixtures to reduce energy usage as well as utility and operating costs.
The concrete retaining wall along the south edge of the lower parking area displays some cracking.	Two cycles of repair costs, Years 1 and 11, are shown in the report,	No Green alternative is suggested.

## Handicap Accessibility / Section 504 Analysis

### Circulation

The hallways, classrooms, and support areas comply with accessible route and clearance requirements.

## Narrative

### Restrooms and Locker Rooms

Several alterations have been applied to restroom to improve accessibility. However, refurbishing the restroom to meet full compliance will be necessary.

Existing conditions	Capital needs	Green alternative
Restroom and Locker room accessibility	An estimate, pending an engineering/architectural survey, to fully comply with UFAS requirements is shown in Year 1.	Serious consideration should be given to the use of water saving devices and Green materials when rehabbing these areas.

### Elevator access between floors

Currently there is one elevator at the high school located in Building "A", basically at the southwest corner of the facility.

Existing conditions	Capital needs	Green alternative
The single existing elevator makes traversing the school building in and expeditious manor difficult for someone that is mobility challenged.	Costs are shown, in the "Building Mechanical Systems" section of this report, to add two additional elevators.	No Green alternative is suggested.

## Narrative

### Mechanical Room

The two central mechanical rooms contain the heating systems. The domestic hot water (DHW) systems are located in separate areas of the facility. The heating system consists of four, gas-fired steam boilers. The condensed (spent) steam is returned to the boilers via a main condensation receiver and several small receiver stations. The DHW system features two gas-fired boilers and one large storage and two smaller storage tanks. The heating systems are controlled by an antiquated pneumatic control systems and compressed air operated steam valves. Compressed air for this system is supplied by two air compressors. One of which was recently replaced. Several sections of the facility are heated using hydronic heat that is created by passing boiler steam through an array of heat exchangers. Hydronic heat circulation is achieved by several base-mounted pump assemblies.

The reports Green recommendations for the heating of the school building includes replacement of the existing steam boilers with high efficiency hydronic gas-fired boilers; replacement of the existing pneumatic control system with an electronic energy management system (EMS), and replacement of the steam heating system with a hydronic system that utilized efficient heat recovery technology. Upgrades to classroom ventilation with heatpumps, capable of air conditioning, is also considered.

### Boilers

There are four, in service, HB Smith gas-fired steam boilers; one was recently replaced.

Existing conditions	Capital needs	Green alternative
The older three boilers have exceeded their expected service life.	Replacement costs are shown (per the costs to replace the newest boiler) in Year 1.	<b>(EWCM 2/2A)</b> Install hydronic high efficiency models with an AFUE of 96% or greater to reduce energy usage as well as utility and operating costs.

## Narrative

### Controls

An extensive pneumatic control system controls the heating plants and area temperature control.

Existing conditions	Capital needs	Green alternative
The system is antiquated and difficult to maintain. The school staff reports uneven heating, or over heating during cold weather operation.	Allowances to maintain the existing control system are shown, on an annual basis, throughout the report.	<b>(EWCM 3)</b> Replace the existing system with an electronic energy management system (EMS) to provide better and more efficient heating of the individual spaces within the high school.
One new and one old air compressors providing compressed air for the pneumatic control system.	Costs to replace the older compressor are shown in Years 1 and 16. Costs for the future replacement of the new compressor are shown in Year 10.	If the recommended EMS system is installed these compressors are no longer needed and are to be removed.

### Hydronic Circulating Pumps

There are ten existing hydronic circulation pumps. The pumps range between 1 and 5 horsepower.

Existing conditions	Capital needs	Green alternative
The pumps are of various ages and condition.	Costs for the as needed replacement of circulation pumps are shown, on an as needed basis, throughout the report	<b>(EWCM 4)</b> When replacing upgrade pump motors from the existing standard service models to premium service models to reduce energy use and utility costs.

## Narrative

Existing conditions	Capital needs	Green alternative
		<b>(EWCM 2A)</b> The proposed conversion to an all hydronic system will require additional circulation pumps. Costs for these pumps are shown in Year 1.
Steam condensate collection and return systems. One system recently replaced	Costs are shown in Year 1 to replace the older condensate receiver and in Year 20 for the newer receiver.	If the proposed all hydronic system is installed these devices will no longer be required and will be removed.
Cooling Tower		Should the proposed upgrade to classroom water source heat pumps ventilators be chosen, a cooling tower system will need to be added to remove excess heat during warm weather operations. Costs for the cooling tower system, pending an engineering survey, are shown in Year 1



## Narrative

### Mechanical Room Piping

Extensive array of isolation valves and piping.

Existing conditions	Capital needs	Green alternative
System is well maintained on an annual basis.	Annual allowances are shown throughout the report for as needed repairs.	No Green alternative is suggested.
There are five building heat exchangers	Allowances to clean and inspect the heat exchangers are shown in Year 1	If the proposed all hydronic heating system is chosen these exchangers will no longer be needed.

### Domestic Hot Water

Domestic hot water is provided by two Lochinvar gas-fired boilers and stored in one large ( $\approx 750$ -gal) tank and two smaller ( $\approx 120$ -gal) tanks. All are understood to be glass-lined tanks.

Existing conditions	Capital needs	Green alternative
The Freshman building DHW boiler is four years old. The Old Building DHW boiler is eight years old.	Future replacement costs for the newer boiler are shown in Year 16; the older boilers replacement costs are shown in Year 12.	<b>(EWCM 5)</b> When replacing install high efficiency ( $\approx 96\%$ AFUE) condensing DHW boiler to reduce energy usage and utility costs.

## Narrative

Existing conditions	Capital needs	Green alternative
The large storage tank is understood to be thirty-three years old. The smaller tanks are five years old.	Replacement costs for the large tanks is shown in Year one. Future replacement costs for the smaller tanks are shown in Years 5 and 15.	<b>(GM 1)</b> Replace the larger tank with six 120-gallon stainless steel storage tanks and the smaller tanks with comparably sized stainless steel tanks. The stainless steel options provide an extended useful life and reduced operating costs.
Smaller glass lined storage tanks	Costs to replace	

## Distribution System

The distribution systems include the domestic hot and cold water, steam heat, and sanitary waste.

The distribution systems vary in age and are repaired on an as needed basis.	An allowance is shown throughout the report for as needed repairs of these systems.	<p>No Green alternative is suggested for the domestic water and sanitary waste systems.</p> <p><b>(EWCM 2)</b> As part of the proposed conversion to an all hydronic heating system costs are shown to replace the steam heat distribution with a hydronic distribution system.</p>
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# Narrative

## Auditorium Heating, Ventilating, and Air Conditioning

The auditorium is heated by several large steam air handling units.

Existing conditions	Capital needs	Green alternative
The age of the existing system is understood to date to the original addition of the auditorium.	Costs to replace the air handlers are shown in Year 1.	As the auditorium space is used on a limited basis (as opposed to the high school sections) it is recommended that the existing air handler equipment be replaced by roof mounted packaged gas-fired heat and electric cooling ventilation (HVAC) units.

## Narrative

### Building Mechanical and Electrical Systems

The major building systems include security, fire suppression, heat/ventilation systems, air conditioning, stale air exhaust equipment, emergency egress lighting, fire/smoke detection and notification system, and elevator.

#### Security Surveillance System

The high school features and extensive closed circuit television system (CCTV).

Existing conditions	Capital needs	Green alternative
CCTV system	Periodic allowances for upgrades and as needed replacement of components are shown every five years within the report.	No Green alternative is suggested.

#### Fire Suppression

The high school features a limited, street pressure, fire sprinkler system

Existing conditions	Capital needs	Green alternative
Fire sprinkles system	Monitor	No Green alternative is suggested.

## Narrative

### Classroom Steam Heat Ventilators

Classrooms are heated and ventilated by exterior wall mounted ventilators.

Existing conditions	Capital needs	Green alternative
The ventilators have exceeded their service life.	Costs to replace the ventilators with models that utilize “Heat Recovery” technology are shown starting in Year 1.	<b>(EWCM 6) Optional</b> Install water source heat pumps (with “Heat Recovery”) to reduce energy usage and provide air conditioning to classrooms. The addition air conditioning provides the school department and the Town with a facility that can be utilized year around.

### Air Conditioning

Selected areas of the school building are air conditioned using split-system air conditioners with a SEER rating of 10.

Existing conditions	Capital needs	Green alternative
The air conditioners are of various ages and condition.	Costs to replace the air conditioners are shown in Years 1, 10, and 20. This replacement assumes upgrades to the current Federal minimum SEER requirement of SEER 13.	<b>(EWCM 7)</b> Install air conditioners with a SEER rating of 18 to achieve a greater costs saving over lower rated systems.

## Narrative

### Gymnasium and Locker Room Heat Ventilators

The gymnasiums and locker rooms are ventilated and heated by interior mounted, steam heated, air handler units.

Existing conditions	Capital needs	Green alternative
The gym and locker room air handlers have exceeded their expected service life.	Replacement costs, are shown starting in Year 1.	<b>(EWCM 8)</b> If the proposed hydronic heating system is chosen install hydronic air handlers that utilize "Heat Recovery" technology.

### Roof Top Makeup Air Units

Several section of the Old Building (A & B) feature "J. C." roof mounted, hydronically heated, makeup air units.

Existing conditions	Capital needs	Green alternative
The makeup air units have exceeded their expected service life.	Costs to replace the makeup air units are shown starting in Year 1.	<b>(EWCM 9)</b> Install comparable units that utilize "Heat Recovery" technology to reduce energy usage and utility costs.

### Building Exhaust Fans

An array of roof mounted exhaust fans remove stale air from the building.

Existing conditions	Capital needs	Green alternative
Approximately half of the exhaust fans have recently been replaced.	Two cycles of replacement costs are shown in the report. Year 1 costs are shown for the older fans and Year 16 costs are shown for the future replacement of the newer fans.	No Green alternative is suggested.

## Narrative

### Building Power Wiring

The electrical distribution system of the high school varies widely in age, manufacture, and condition.

Existing conditions	Capital needs	Green alternative
Power distribution system.	Allowances are shown in Years 1-5 to replace the older systems and upgrade service where needed.	No Green alternative is suggested.

### Emergency Egress Lighting

The emergency egress lighting is a mix of wet and dry cell battery powered fixtures.

Existing conditions	Capital needs	Green alternative
The egress lighting varies in age and condition.	Allowances are shown throughout the report for as needed repairs and replacements.	No Green alternative is suggested.

## Narrative

### Smoke / Fire Detection and Notification Systems

There are three systems at the facility.

Existing conditions	Capital needs	Green alternative
All systems were recently replaced.	<p>Future replacement costs are shown in Year 18, after a twenty year service life.</p> <p>The system in the Old Building section did not receive new field devices (smoke detectors, pull stations, horn/strobe units. Costs to upgrade the devices are shown in Year 1.</p>	No Green alternative is suggested.

### Elevators

There is one hydraulic elevator which serves all floors of the facility. The elevator is located in the oldest (A) building.

Existing conditions	Capital needs	Green alternative
It is understood that the elevator is 33-years old and is approaching the end of its expected service life.	Costs to replace this elevator and to add two additional elevators (for ADA accessibility) are shown in Year 1.	No Green alternative is suggested.



# Narrative

## Building Architectural Systems

### Building Exterior

Arlington High School has been developed over the past 100 years. Its use as the Town of Arlington’s secondary school facility exposes it to extensive use during most of the year. Discussed in this section are the exterior and interior spaces of the “Old Building” (sections A & B), the Freshman Building, Auditorium, Gyms, and Connector (Link) sections. These sections compose the principal school and office areas of the facility. The Athletic complex with its various playing fields is not included in this report.

The buildings are predominantly clad in brick masonry; the Connector section (built in the early 1980s) is clad in colored and textured concrete masonry units. A section of the roof at the Old Building (Bldg B) is pitched and covered with slate shingles. This section also features a wood framed and clad clock steeple and a classically detailed entry portico. The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system. Windows are believed to date from the 1960 and 1980 expansions.

The staff pointed out that water was infiltrating through the floor of the Old Buildings mechanical room.

### Boiler Room Floor (Old Building)

Water is infiltrating up through the concrete floor slab.

Existing conditions	Capital needs	Green alternative
Water infiltration	An allowance is shown in Year 1 to have a hydrostatic engineering study preformed to understand the cause of the water infiltration and suggest a remedial course of action.	No Green alternative is suggested.

## Narrative

### Exterior Stairs

Several sections of masonry and wood stair sets were observed at the high school.

Existing conditions	Capital needs	Green alternative
The concrete and granite stair sets vary in age and condition.	Annual allowances are shown throughout the report for as needed repairs to these stair sets.	No Green alternative is suggested.
A pressure treated wood stair set is located at the cafeteria courtyard. It is in fair condition.	Costs to replace the this stair set are shown in Year 1.	No Green alternative is suggested.

### Exterior Entry and Service Doors

There is a mix of wood and glass, aluminum and glass, sliding glass, and flush panel metal doors throughout the facility. Exterior doors are believed to date from the 1960 and 1980 expansions

Existing conditions	Capital needs	Green alternative
All doors experience heavy use. Evidence of repairs (frame reinforcement, added hinges) was observed on many.	Costs to replace the doors are shown starting in Year 1.	<b>(EWCM 11) Optional</b> Replace all doors with comparable insulated fiberglass models that have a U-value of .38 to reduce energy usage as well as utility and operating costs.

### Clock Steeple

## Narrative

A wood framed and sided clock steeple rises above the B section of the Old Building and dates to the original 1914 construction.

Existing conditions	Capital needs	Green alternative
Close inspection of this steeple was not possible during on the day of the assessment. However, staff reports that areas of dry rot have been found in the structure and siding. In addition the clock is not currently operational.	An allowance to restore the steeple and repair the clock is shown in Year 1.	No Green alternative is suggested.

## Hazardous Material Abatement

The administration and maintenance staff expressed their concern regarding hazardous materials used during the original construction. Given the age of most of the school buildings this is a reasonable concern

Existing conditions	Capital needs	Green alternative
Hazardous Material abatement	An allowance to address hazardous material abatement is shown in Year 1 of the report.	The removal of all hazardous material is considered a good Green practice.

## Narrative

### Exterior Walls

The building sections are clad in brick and concrete block (CMU) masonry. Recent repointing and water proofing work was preformed on a portion of the facility.

Existing conditions	Capital needs	Green alternative
Brick masonry	Cycles of brick repointing and waterproofing are shown every six years, starting in Year 7.	No Green alternative is suggested.
Concrete block masonry	Cycles of concrete block repointing and waterproofing are shown every fifteen years, starting in Year 5.	No Green alternative is suggested.

### Trim, Soffits, and Fascia

Painted wood details at older building sections

Existing conditions	Capital needs	Green alternative
Some deterioration noted, peeling paint observed.	Allowances to paint and repair these detail areas are shown in Years 1 and 11.	No Green alternative is suggested.

## Narrative

### Decorative Faux Balcony – Main Entrance

A painted wood faux balcony accents the main entry of the high school.

Existing conditions	Capital needs	Green alternative
Poor overall condition, section of deterioration noted.	Allowances to repair and paint are shown in Years 1 and 19 of the report.	No Green alternative is suggested.

### Building Mounted HID Security Lighting

There are approximately 17 wall mounted LED and HID security flood lights located straightly around the facility.

Existing conditions	Capital needs	Green alternative
Ages and conditions vary.	Costs to replace the HID fixtures are shown starting in Year 1	<b>(EWCM 1)</b> Replace the HID fixtures with long lived efficient LED fixtures to reduce energy usage as well as utility and operating costs.

### Windows

Windows are a mix of wood, steel, and aluminum framed models believed to date to the 1960 and 1980 expansions.

Existing conditions	Capital needs	Green alternative
All window types have exceeded their expected useful service life.	Costs to replace all of the windows are shown starting in Year 1.	<b>(EWCM 12)</b> Replacement of the windows/curtain walls and fixed panels with aluminum-framed double-glazed models

## Narrative

Existing conditions	Capital needs	Green alternative
		with a low-E (low emissivity) coating, a thermal break, and a gas fill between the glazing layers. The low-e coating will reflect heat from entering the building during the summer, and can reflect radiant infrared energy from escaping the building during the heating months. A thermal break includes an element of low thermal conductivity, such as wood, between the inner and exterior metal frames to reduce thermal transfer. A gas fill (such as argon) between the glazing layers will reduce heat transfer through the glass similar to the low-e coating.

### Window Weather Caulking and Lintel Painting

Caulking around window frames

Existing conditions	Capital needs	Green alternative
To be done with window replacement.	A future cycle of window caulking is shown in Year 15.	It is recommended that the windows be monitored and appropriately caulked going forward to keep air infiltration to a minimum.

## Narrative

Existing conditions	Capital needs	Green alternative
Painted steel lintels at most window locations	Costs to scrape and paint the lintels are shown in Years 1 and 11.	No Green alternative is suggested.

## Roof Surfaces

The Connector section has roof areas covered with standing seam metal roofing. The remaining areas have generally flat roofs covered with recently installed white T.P.O. (thermoplastic polyolefin) membrane roofing system.

Existing conditions	Capital needs	Green alternative
Membrane roofing - T. P. O. Older sections	Future replacement costs are shown in Year 12.	No Green alternative is suggested.  The existing roofing materials are seen as good Green choices.
Membrane roofing – T. P. O. Newer sections	Future replacement costs are shown in Year 20.	
Slate roofing Old Building	Allowances for as needed repairs are shown annually throughout the report.	
Standing seam roofing – Connector, blown off sections noted.	Periodic allowances for repairs are shown in Years 1, 11, and 16.	

### Note:

We do not, as yet, recommend a ‘green vegetative roof’ – the installation of soil and vegetation on a waterproof membrane - as an option. While these may also reduce roof temperatures and cooling loads, and reduce stormwater run-off, they are much more expensive than conventional systems, and we see too many questions about performance and maintenance.

## Narrative

### Building Interior

Interior spaces include hallways, classrooms, support learning areas; cafeteria and commercial kitchen; two gyms, weight room and locker/shower facilities; auditorium and stage area; school offices, school department offices, and restrooms. Most these areas have vinyl composite tile (VCT) flooring. With the exception of approximately 2%, which has been recently replaced by the maintenance staff, the VCT has exceeded its expected useful service life. Many worn areas were observed. VCT is a petroleum based product, as such the material off-gases volatile organic compounds, which are considered unhealthy. As a viable alternative, it is suggested that future flooring replacements use natural linoleum tile. Natural linoleum is a biodegradable product that does not off-gas VOCs and it has a longer service life than its petroleum based alternatives providing a favorable life cycle cost comparison. Carpet maintenance, repairs, and replacement tend to be problematic and costly. It is suggested that carpet tile, with the Green Label Plus designation from the Carpet and Rug Institute (CRI), be considered as an alternative to sheet carpet. Carpet tile allows for the easy replacement of stained and worn areas by in-house staff. The CRI Green Label Plus certified carpet is made from natural fibers and dramatically reduces the off gassing of VOCs.

### Flooring

The flooring throughout the hallways and classrooms is chiefly vinyl composite tile (VCT). Selected areas (Media Center, Auditorium, and offices) have carpet flooring.

Existing conditions	Capital needs	Green alternative
The VCT flooring is generally in poor condition. Worn through sections were observed at most locations	Costs to replace all of the VCT are shown in Year 1. In Year 15 allowances are shown for as needed sectional replacements.	<b>(GM 2)</b> Replacement of the VCT with linoleum tile. Linoleum is a natural product (containing linseed oil, powdered wood or cork, ground limestone, resin binders, natural jute backing), which has been found to be more durable than its vinyl tile counterpart.



## Narrative

Existing conditions	Capital needs	Green alternative
		Linoleum tile hardens over time, and therefore becomes less susceptible to scratching and cracking. Installation of linoleum has a lower annual life cycle cost than vinyl and keeps the vinyl product out of our landfills in the future.
Carpet flooring varies in condition and age.	Costs to replace the carpet are shown in Years 1 and 11.	<b>(GM 3) Optional</b> It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.

## Narrative

### Hallway Doors

Interior double fire doors, steel doors in steel frames.

Existing conditions	Capital needs	Green alternative
Most of the interior fire doors are failing in that hinges have been replaced a number of times and the doors are now dragging and will not provide protection they were originally intended to provide.	Costs to replace the doors, frames and closers are shown starting in Year 1.	No Green alternative is suggested.

### Interior Lighting

The interior lighting was upgraded, in phases, to all fluorescent fixtures in the past.

Existing conditions	Capital needs	Green alternative
The fluorescent lighting is a mix of different ages and bulb types.	Costs to replace all the fixtures are shown starting in Year 1.	<b>(EWCM 13)</b> Replace the fluorescent fixtures with long lived, efficient LED fixtures to significantly reduce energy usage as well as utility and operating costs.

### Student Lockers

Metal recessed lockers throughout the hallways of the school's buildings

Existing conditions	Capital needs	Green alternative
The lockers vary widely in condition and age.	Costs to replace the lockers are shown starting in Year 1.	No Green alternative is suggested.

## Narrative

### Stairs

Stairs are covered with rubber flooring and treads. Doors are double metal fire rated types.

Existing conditions	Capital needs	Green alternative
Conditions vary	Replacement costs are shown annually throughout the report.	Suggest the use of a low-VOC adhesive when replacing.
Conditions vary	Replacement costs are shown starting in Year 1	No Green alternative is suggested.

### Classrooms

Classrooms vary in size and use. Floors are VCT and the walls and ceilings are painted surfaces. Each classroom has a set of wood cabinets and shelving. Science and technology classrooms also feature furnishing specific to their individual needs. The Administration expressed its concern that the features in the science and tech classrooms may not be up to current standards.

Existing conditions	Capital needs	Green alternative
Cabinetry and shelving conditions vary depending on age and use.	Allowances to replace the cabinetry and shelving are shown starting in Year 1.	No Green alternative is suggested. .
Science and technology classrooms	Allowances to upgrade the fixtures and futures in these classrooms are shown starting in Year 3.	No Green alternative is suggested.

## Narrative

### Media Center

The media center combines a traditional library and computer center. Furnishings include shelving, reading/study tables, and privacy alcoves.

Existing conditions	Capital needs	Green alternative
The carpet varies in condition depending on location (traffic patterns show more wear that sitting areas).	Carpet replacement costs are shown every ten years starting in Year 1.	<b>(GM 3) Optional</b> It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.
The furnishings in the media center are in good condition.	Future replacement allowances are shown starting in Tear 10	No Green alternative is suggested.

## Narrative

### Gymnasiums and Locker Rooms

Gym and weight room floors are covered with rubber sheet goods. Locker room floors are painted concrete at the lockers and ceramic tile in the shower areas.

Existing conditions	Capital needs	Green alternative
Gym flooring	Costs to replace the gym flooring are shown in Year 10.	No Green alternative is suggested.
Locker room painted flooring.	Repainting cycles are shown every five years.	Recommend the use of low-VOC content paint.

### Cafeteria / Kitchen

Full service commercial kitchen and dining room with fold away table/seating furniture.

Existing conditions	Capital needs	Green alternative
All of the kitchen equipment is commercial grade.	Annual allowances for as needed replacements and repairs are shown throughout the report.	No Green alternative is suggested.
Fold away tables	Replacement costs are shown in Year 10 of the report	No Green alternative is suggested.

## Narrative

### Auditorium

The Auditorium features acoustic wood paneled walls and some small areas of painted drywall; the ceiling is a painted surface. Flooring is a mix of replaceable wood stage paneling (considered an operating expense), carpeted aisles, and sealed concrete (under the seats).

Existing conditions	Capital needs	Green alternative
Carpeted aisles.	Costs to replace the carpeting are shown in Years 1 and 16 of the report	<b>(GM 3) Optional</b> It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.
Seating; wood folding stadium type.	Allowances to repair / replace seating, as needed, are shown in Years 1, 6, 11, and 16.	No Green alternative is suggested.

## Narrative

### Restrooms

Restrooms feature painted walls and ceilings, ceramic tile floors, and standard institutional grade fixtures. Portions are aged metal types. Some partitions have been replaced with heavy duty PVC paneling.

Existing conditions	Capital needs	Green alternative
Fixtures and accessories have been replaced on an as needed basis.	Allowances to continue this practice are shown throughout the report.	It is suggested that water saver type fixtures be installed when available.
Metal restroom partitions, poor overall condition	Costs to replace the metal partitions with heavy duty PVC are shown starting in Year 1.	No Green alternative is suggested.

### School Offices, Support Areas, and School Department Offices

Walls and ceilings are painted surfaces, floors are a mix of VCT and carpet.

Existing conditions	Capital needs	Green alternative
Carpeted areas	Costs to replace that carpet are shown in Years 1 and 10.	<b>(GM 3) Optional</b> It is recommended that a higher grade carpet that carries the Carpet and Rug Institute's (CRI) Green Label Plus designation be used. In addition, it is worth noting that carpet tiles offer certain advantages to standard carpeting – damaged/worn sections can be replaced one at a time, and can often be handled by site staff instead of contractors. This can reduce re-carpeting costs over time.

## **Narrative**

### **Capital Needs Summary, Replacement Reserve Analysis - *Conventional***

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$29,829,456 in current dollars, or \$33,348,660 in inflated dollars.

### **Capital Needs Summary, Replacement Reserve Analysis - *Green***

Future capital actions are based on useful life expectations and assume continued effective maintenance and physical management. The timing of actions by system (including quantities and costs) is also presented in the Capital Needs Worksheet. Costs for the twenty-year plan total \$32,384,400 in current dollars, or \$35,235,571 in inflated dollars.

#### *Additional Notes:*

1. The Physical Assessment of the property was conducted on April 16<sup>th</sup> & 17<sup>th</sup>, 2013. Members of the Arlington High School staff provided information on the property's current condition, recent repairs, and near-term needs. Additional information was provided by informal interviews with residents during the dwelling unit evaluation portion of the assessment. We would like to thank site staff for their assistance.
2. OSI was represented on this assignment by Bob Labadini. Mr. Labadini is a Building Performance Institute (BPI)-certified energy auditor, and LEED Green Associate accredited. Mr. Labadini complied with the applicable professional standards for ethics as defined by the BPI Code of Ethics during the assessment process.
3. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.





The front access loop and parking



Example of asphalt work needed on front access loop



The rear access loop. Note snowplow damage.



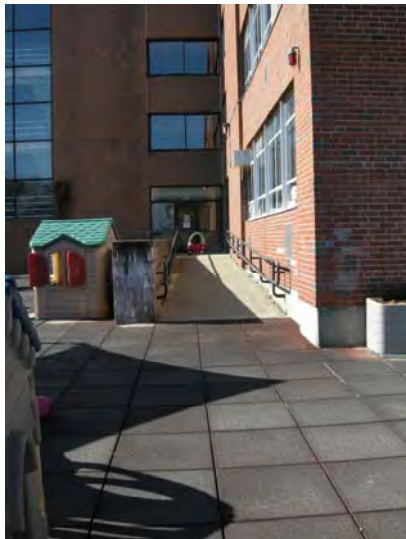
Section of rear (lower) parking area



Concrete walkway with spalling concrete areas



Typical example of needed concrete repairs



The playground at the Child Development Center



Example of the new LED site lighting fixture





Gas-fired steam boilers at the Freshman Building



Recently replaced boiler at the Old Buildings



Older boiler at the Old Buildings



New condensate receiver at Old Buildings



Old condensate receiver at Freshman Building



New air compressor at Old Buildings



Old compressor at Freshman Building



Typical pneumatic system control panel





Recently replaced pneumatically controlled steam valve



Failing pneumatically controlled steam valve



Typical steam to water heat exchanger



Domestic hot water boiler at the Old Buildings



One of two glass-lined DHW storage tanks at the Old Buildings



DHW boiler at the Freshman Building



Large DHW storage tank at the Freshman Building



Typical hydronic heat circulation pumps





One of three split-system air conditioners



Typical gym/locker room heat/ventilator unit



Typical Old Buildings roof mounted heat/ventilation unit



Typical roof mounted exhaust fans



Typical new addressable fire alarm panel



Auditorium wing entry doors

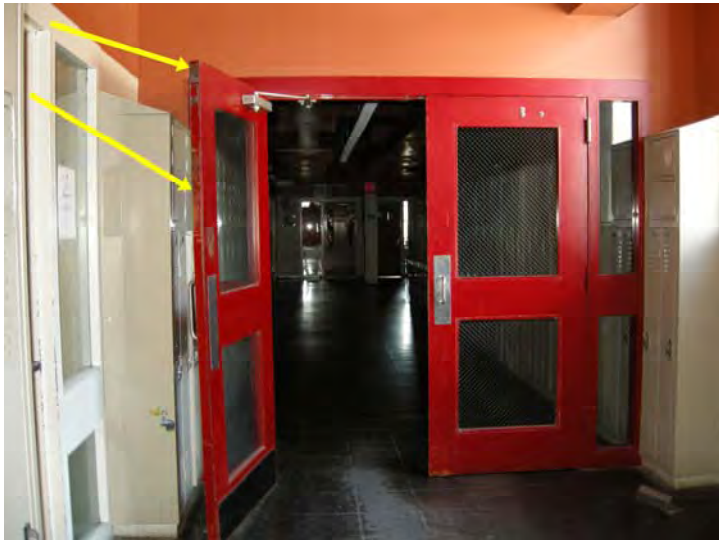


Typical service doors



Connector section doors from central Courtyard.  
Note frame reinforcement.





Typical interior fire doors.  
Note worn areas indicating miss alignment.



Building "B" of Old Buildings showing  
classic façade and clock steeple



The auditorium wing



High School office wing



Building "A" of the Old Buildings section



Main Entry of Building "A"



West elevation of building "A"



West elevation of the connector section





North elevation of the Red Gym



West facing entry of the connector section



East and North elevations of the Freshman Building



East elevation of the "B" building



East elevation of the connector section referred to as the "Link"



Building "B" slate roof area



A portion of the connector section's standing seam metal roof



Typical T.P.O. roof section





The central courtyard



Damaged gutters



Typical hallway



Typical example of VCT flooring wear.



Typical classroom



Typical classroom cabinetry.



Typical classroom heat/ventilation unit



The Media Center





Blue Gym



Red Gym



Girls Locker Room



Typical Girls private shower stall



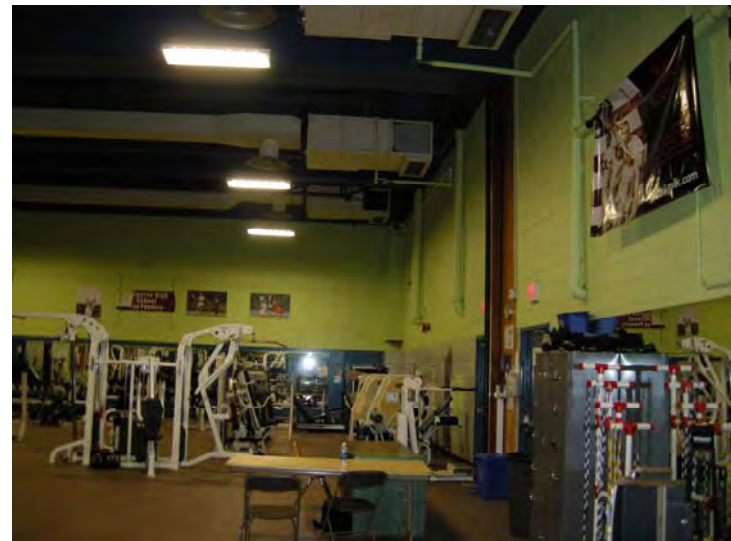
Boys Gym



Typical boys gym gang shower



Typical restroom area with updated partitions



The weight Room





The cafeteria



The commercial kitchen



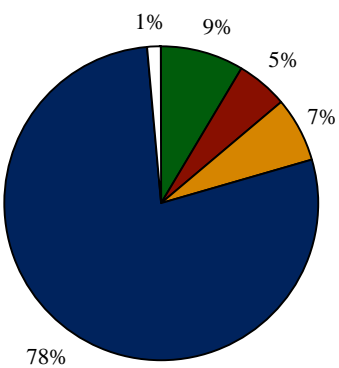
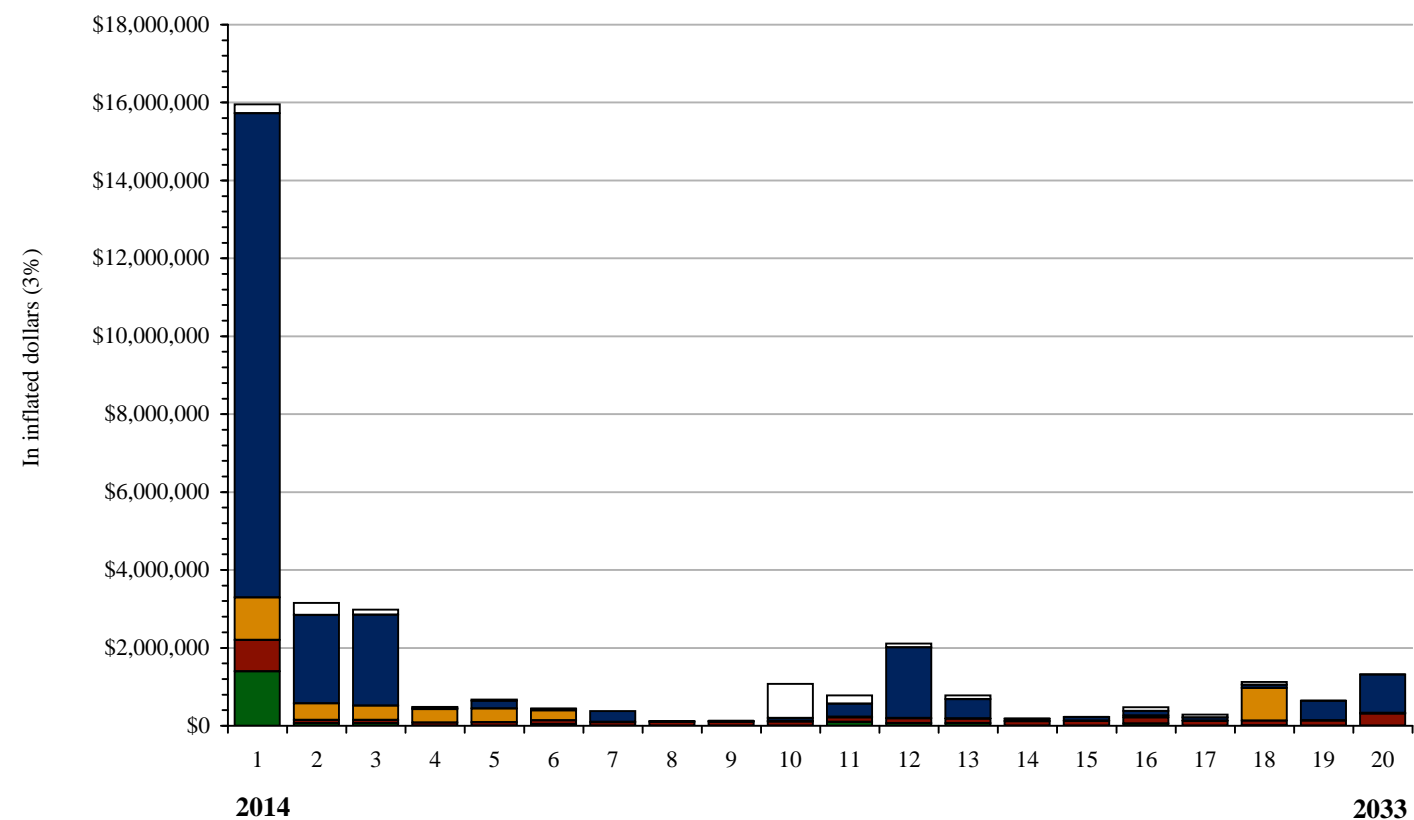
The auditorium



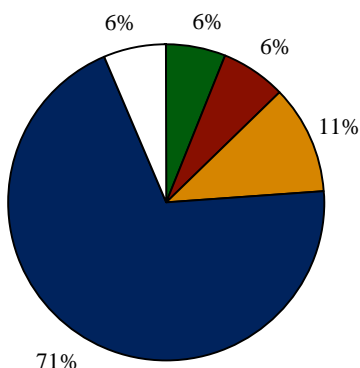
The auditorium stage area

Capital Needs Summary - *Conventional*

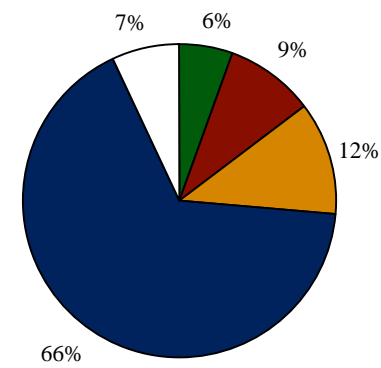
Arlinton High School



Year One Distribution



Ten Year Distribution



Twenty Year Distribution

Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$1,393,054	\$1,570,938	\$1,864,261
Mechanical Room	\$812,579	\$1,641,676	\$3,071,587
Building Mech. & Elec.	\$1,086,833	\$2,870,687	\$3,849,036
Building Architectural	\$12,433,938	\$17,673,911	\$22,231,967
Bldg. Arch Support	\$226,990	\$1,638,544	\$2,331,809
In inflated dollars:	\$15,953,395	\$25,395,755	\$33,348,660
In current dollars:	\$15,953,395	\$24,593,084	\$29,829,456

## Capital Needs Summary - *Conventional*

OSI Ref: 13472  
 Property Age: 100 Years  
 Financing: Municipal

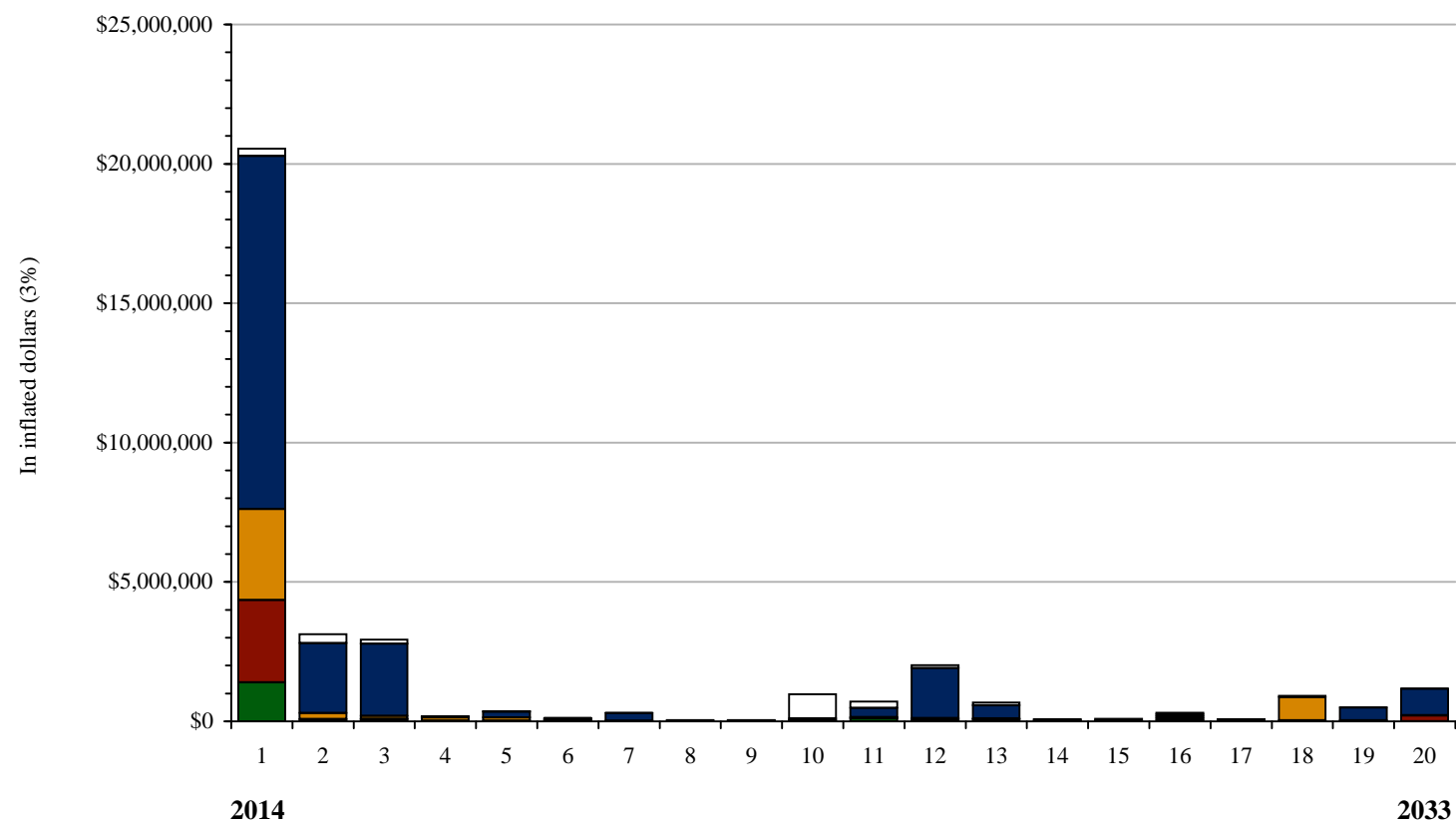
Residential Buildings: 1  
 Total Number of Units: 1  
 Occupancy: School

	2014 Year 1	2015 Year 2	2016 Year 3	2017 Year 4	2018 Year 5	2019 Year 6	2020 Year 7	2021 Year 8	2022 Year 9	2023 Year 10
<b>Site Systems &amp; Accessibility</b> Surface/Accessibility	\$1,393,054	\$67,789	\$69,822	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Site Sub-Total	<b>\$1,393,054</b>	<b>\$67,789</b>	<b>\$69,822</b>	<b>\$0</b>	<b>\$0</b>	<b>\$40,273</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Mechanical Room</b> Boilers	\$706,613	\$24,548	\$25,285	\$26,043	\$26,825	\$34,249	\$28,458	\$29,312	\$30,191	\$39,865
Boiler Room Systems	\$105,966	\$55,105	\$56,758	\$58,461	\$64,717	\$62,021	\$63,882	\$65,798	\$67,772	\$69,805
Mechanical Sub-Total	<b>\$812,579</b>	<b>\$79,653</b>	<b>\$82,043</b>	<b>\$84,504</b>	<b>\$91,541</b>	<b>\$96,270</b>	<b>\$92,340</b>	<b>\$95,110</b>	<b>\$97,964</b>	<b>\$109,671</b>
<b>Building Mech. &amp; Electrical</b> Mechanical	\$349,333	\$325,823	\$256,031	\$230,930	\$237,858	\$256,586	\$3,582	\$3,690	\$3,800	\$8,481
Electrical	\$127,500	\$105,575	\$108,742	\$112,005	\$115,365	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262
Elevators	\$610,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	<b>\$1,086,833</b>	<b>\$431,398</b>	<b>\$364,773</b>	<b>\$342,934</b>	<b>\$353,222</b>	<b>\$259,484</b>	<b>\$6,567</b>	<b>\$6,764</b>	<b>\$6,967</b>	<b>\$11,743</b>
<b>Building Architectural</b> Structural and Exterior	\$11,110,217	\$965,333	\$994,293	\$14,970	\$183,958	\$15,882	\$262,233	\$2,460	\$2,534	\$2,610
Roof Systems	\$13,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893
Halls, Stairs, Class Rooms	\$681,370	\$701,811	\$722,865	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289
Class Rooms, Industrial Arts	\$628,602	\$593,037	\$610,828	\$0	\$0	\$0	\$0	\$0	\$0	\$61,891
Building Architectural Sub-Total	<b>\$12,433,938</b>	<b>\$2,264,043</b>	<b>\$2,331,965</b>	<b>\$27,685</b>	<b>\$197,054</b>	<b>\$29,371</b>	<b>\$276,127</b>	<b>\$16,771</b>	<b>\$17,274</b>	<b>\$79,682</b>
<b>Building Architectural</b> Gymnasiums/Locker Rooms	\$45,682	\$224,573	\$45,653	\$21,855	\$22,510	\$3,072	\$0	\$0	\$0	\$409,538
Cafeteria/Auditorium	\$38,810	\$30,842	\$31,768	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$463,194
Auditorium/Restrooms/Offices	\$70,963	\$57,267	\$58,985	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0
School Department Offices	\$71,535	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Architectural Sub-Total	<b>\$226,990</b>	<b>\$312,683</b>	<b>\$136,406</b>	<b>\$27,318</b>	<b>\$28,138</b>	<b>\$15,824</b>	<b>\$5,970</b>	<b>\$6,149</b>	<b>\$6,334</b>	<b>\$872,732</b>
<b>Total Capital Costs</b>	<b>\$15,953,395</b>	<b>\$3,155,567</b>	<b>\$2,985,008</b>	<b>\$482,442</b>	<b>\$669,955</b>	<b>\$441,222</b>	<b>\$381,005</b>	<b>\$124,794</b>	<b>\$128,538</b>	<b>\$1,073,828</b>

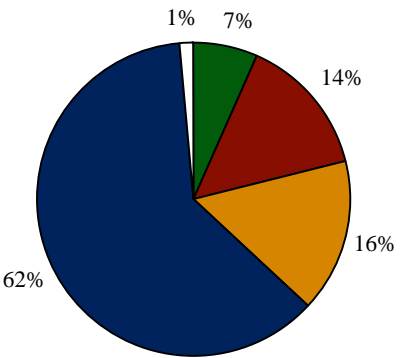
Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2024 Year 11	2025 Year 12	2026 Year 13	2027 Year 14	2028 Year 15	2029 Year 16	2030 Year 17	2031 Year 18	2032 Year 19	2033 Year 20	
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	<b>Site Systems &amp; Accessibility</b> Surface Accessibility
<b>\$99,746</b>	<b>\$65,033</b>	<b>\$66,984</b>	<b>\$0</b>	<b>\$0</b>	<b>\$54,123</b>	<b>\$0</b>	<b>\$7,438</b>	<b>\$0</b>	<b>\$0</b>	Site Sub-Total
\$39,704	\$32,991	\$33,981	\$35,000	\$36,050	\$56,497	\$38,246	\$39,393	\$40,575	\$217,756	<b>Mechanical Room</b> Boilers Boiler Room Systems
\$71,900	\$87,899	\$76,278	\$78,567	\$86,974	\$98,931	\$85,852	\$88,427	\$91,080	\$93,813	
<b>\$111,603</b>	<b>\$120,890</b>	<b>\$110,259</b>	<b>\$113,567</b>	<b>\$123,024</b>	<b>\$155,428</b>	<b>\$124,097</b>	<b>\$127,820</b>	<b>\$131,655</b>	<b>\$311,569</b>	Mechanical Sub-Total
\$17,471	\$4,153	\$4,277	\$4,406	\$4,538	\$50,634	\$4,814	\$4,959	\$5,107	\$11,398	<b>Building Mech. &amp; Electrical</b> Mechanical Electrical Elevators
\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$832,209	\$4,256	\$4,384	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>\$20,831</b>	<b>\$7,613</b>	<b>\$7,842</b>	<b>\$8,077</b>	<b>\$8,319</b>	<b>\$54,529</b>	<b>\$8,826</b>	<b>\$837,167</b>	<b>\$9,363</b>	<b>\$15,782</b>	Mechanical & Electrical Sub-Total
\$52,010	\$18,964	\$329,801	\$20,119	\$38,420	\$39,572	\$21,984	\$22,644	\$436,361	\$286,600	<b>Building Architectural</b> Structural and Exterior Roof Systems Halls, Stairs, Lobbies Community Spaces
\$18,479	\$1,596,411	\$5,347	\$5,507	\$5,672	\$21,422	\$6,018	\$6,198	\$6,384	\$644,561	
\$58,830	\$60,595	\$62,413	\$11,581	\$26,831	\$27,636	\$28,465	\$29,319	\$30,198	\$31,104	
\$208,982	\$142,111	\$98,849	\$20,707	\$21,329	\$21,968	\$22,627	\$23,306	\$24,005	\$24,726	
<b>\$338,301</b>	<b>\$1,818,081</b>	<b>\$496,410</b>	<b>\$57,914</b>	<b>\$92,251</b>	<b>\$110,599</b>	<b>\$79,094</b>	<b>\$81,467</b>	<b>\$496,949</b>	<b>\$986,991</b>	Building Architectural Sub-Total
\$34,514	\$31,882	\$32,838	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0	<b>Dwelling Units</b> Living Areas Bathrooms Kitchens Mechanical & Electrical
\$33,791	\$22,532	\$23,208	\$7,343	\$7,563	\$29,082	\$29,955	\$30,853	\$8,512	\$8,768	
\$51,145	\$44,374	\$45,705	\$0	\$0	\$64,901	\$42,193	\$43,459	\$0	\$0	
\$93,724	\$0	\$0	\$0	\$0	\$2,797	\$0	\$0	\$0	\$0	
<b>\$213,174</b>	<b>\$98,788</b>	<b>\$101,751</b>	<b>\$7,343</b>	<b>\$7,563</b>	<b>\$100,907</b>	<b>\$72,148</b>	<b>\$74,312</b>	<b>\$8,512</b>	<b>\$8,768</b>	Dwelling Units Sub-Total
<b>\$783,655</b>	<b>\$2,110,404</b>	<b>\$783,245</b>	<b>\$186,900</b>	<b>\$231,157</b>	<b>\$475,586</b>	<b>\$284,165</b>	<b>\$1,128,205</b>	<b>\$646,479</b>	<b>\$1,323,109</b>	<b>Total Capital Costs</b>

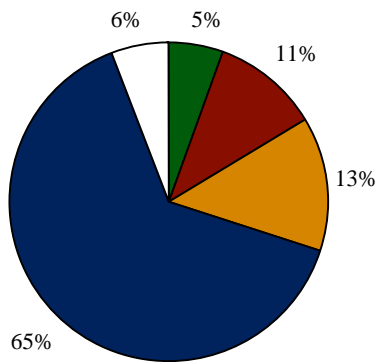
Capital Needs Summary - Green



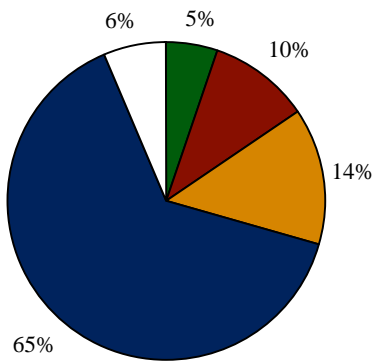
Arlinton High School



Year One Distribution



Ten Year Distribution



Twenty Year Distribution

Total Costs by Building System (inflated dollars)

	Year 1	Years 1-10	Years 1-20
Site Systems & Accessibility	\$1,393,887	\$1,573,514	\$1,866,837
Mechanical Room	\$2,962,870	\$3,153,730	\$3,654,907
Building Mech. & Elec.	\$3,255,250	\$3,865,484	\$4,862,530
Building Architectural	\$12,673,727	\$18,381,016	\$22,634,156
Bldg. Arch Support	\$257,633	\$1,694,253	\$2,217,142
In inflated dollars:	\$20,543,367	\$28,667,997	\$35,235,571
In current dollars:	\$20,543,367	\$28,035,621	\$32,384,400

# Capital Needs Summary - Green

OSI Ref: 13472  
 Property Age: 100 Years  
 Financing: Municipal

Residential Buildings: 1  
 Total Number of Units: 1  
 Occupancy: School

	2014 Year 1	2015 Year 2	2016 Year 3	2017 Year 4	2018 Year 5	2019 Year 6	2020 Year 7	2021 Year 8	2022 Year 9	2023 Year 10
<b>Site Systems &amp; Accessibility</b>										
Surface	\$1,393,887	\$68,647	\$70,707	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0
Accessibility	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Sub-Total	<b>\$1,393,887</b>	<b>\$68,647</b>	<b>\$70,707</b>	<b>\$0</b>	<b>\$0</b>	<b>\$40,273</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Mechanical Room</b>										
Boilers	\$1,846,870	\$0	\$0	\$0	\$0	\$9,042	\$0	\$0	\$0	\$8,768
Boiler Room Systems	\$1,116,000	\$16,480	\$16,974	\$17,484	\$23,636	\$18,548	\$19,105	\$19,678	\$20,268	\$20,876
Mechanical Sub-Total	<b>\$2,962,870</b>	<b>\$16,480</b>	<b>\$16,974</b>	<b>\$17,484</b>	<b>\$23,636</b>	<b>\$27,591</b>	<b>\$19,105</b>	<b>\$19,678</b>	<b>\$20,268</b>	<b>\$29,644</b>
<b>Building Mech. &amp; Electrical</b>										
Mechanical	\$2,517,750	\$106,090	\$3,183	\$3,278	\$3,377	\$15,071	\$3,582	\$3,690	\$3,800	\$11,091
Electrical	\$127,500	\$105,575	\$108,742	\$112,005	\$115,365	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262
Elevators	\$610,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mechanical & Electrical Sub-Total	<b>\$3,255,250</b>	<b>\$211,665</b>	<b>\$111,925</b>	<b>\$115,283</b>	<b>\$118,741</b>	<b>\$17,969</b>	<b>\$6,567</b>	<b>\$6,764</b>	<b>\$6,967</b>	<b>\$14,353</b>
<b>Building Architectural</b>										
Structural and Exterior	\$11,224,283	\$1,081,792	\$1,114,246	\$14,970	\$183,958	\$15,882	\$262,233	\$2,460	\$2,534	\$2,610
Roof Systems	\$13,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893
Halls, Stairs, Class Rooms	\$779,482	\$802,866	\$826,952	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289
Class Rooms, Industrial Arts	\$656,212	\$614,791	\$633,235	\$0	\$0	\$0	\$0	\$0	\$0	\$43,492
Building Architectural Sub-Total	<b>\$12,673,727</b>	<b>\$2,503,312</b>	<b>\$2,578,411</b>	<b>\$27,685</b>	<b>\$197,054</b>	<b>\$29,371</b>	<b>\$276,127</b>	<b>\$16,771</b>	<b>\$17,274</b>	<b>\$61,284</b>
<b>Building Architectural</b>										
Gymnasiums/Locker Rooms	\$45,682	\$224,573	\$45,653	\$21,855	\$22,510	\$3,072	\$0	\$0	\$0	\$409,538
Cafeteria/Auditorium	\$42,910	\$35,065	\$36,117	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$463,194
Auditorium/Restrooms/Offices	\$81,192	\$65,392	\$67,354	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0
School Department Offices	\$87,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Architectural Sub-Total	<b>\$257,633</b>	<b>\$325,030</b>	<b>\$149,124</b>	<b>\$27,318</b>	<b>\$28,138</b>	<b>\$15,824</b>	<b>\$5,970</b>	<b>\$6,149</b>	<b>\$6,334</b>	<b>\$872,732</b>
<b>Total Capital Costs</b>	<b>\$20,543,367</b>	<b>\$3,125,134</b>	<b>\$2,927,141</b>	<b>\$187,770</b>	<b>\$367,569</b>	<b>\$131,027</b>	<b>\$307,769</b>	<b>\$49,362</b>	<b>\$50,843</b>	<b>\$978,014</b>

# Arlinton High School

Costs on these pages are aggregated by category from the Capital Needs worksheets which follow. Total capital costs on these pages are carried forward to line F of the Replacement Reserve Analysis(es) that follow.

2024 Year 11	2025 Year 12	2026 Year 13	2027 Year 14	2028 Year 15	2029 Year 16	2030 Year 17	2031 Year 18	2032 Year 19	2033 Year 20	
\$99,746	\$65,033	\$66,984	\$0	\$0	\$54,123	\$0	\$7,438	\$0	\$0	<b>Site Systems &amp; Accessibility</b> Surface Accessibility
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>\$99,746</b>	<b>\$65,033</b>	<b>\$66,984</b>	<b>\$0</b>	<b>\$0</b>	<b>\$54,123</b>	<b>\$0</b>	<b>\$7,438</b>	<b>\$0</b>	<b>\$0</b>	Site Sub-Total
\$10,483	\$0	\$0	\$0	\$0	\$22,622	\$0	\$0	\$0	\$175,964	<b>Mechanical Room</b> Boilers Boiler Room Systems
\$21,503	\$43,603	\$22,812	\$23,497	\$24,201	\$49,076	\$25,675	\$26,446	\$27,239	\$28,056	
<b>\$31,985</b>	<b>\$43,603</b>	<b>\$22,812</b>	<b>\$23,497</b>	<b>\$24,201</b>	<b>\$71,698</b>	<b>\$25,675</b>	<b>\$26,446</b>	<b>\$27,239</b>	<b>\$204,020</b>	Mechanical Sub-Total
\$17,471	\$4,153	\$4,277	\$4,406	\$4,538	\$65,824	\$4,814	\$4,959	\$5,107	\$14,905	<b>Building Mech. &amp; Electrical</b> Mechanical Electrical Elevators
\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$832,209	\$4,256	\$4,384	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>\$20,831</b>	<b>\$7,613</b>	<b>\$7,842</b>	<b>\$8,077</b>	<b>\$8,319</b>	<b>\$69,719</b>	<b>\$8,826</b>	<b>\$837,167</b>	<b>\$9,363</b>	<b>\$19,289</b>	Mechanical & Electrical Sub-Total
\$52,010	\$18,964	\$329,801	\$20,119	\$38,420	\$39,572	\$21,984	\$22,644	\$436,361	\$286,600	<b>Building Architectural</b> Structural and Exterior Roof Systems Halls, Stairs, Lobbies Community Spaces
\$18,479	\$1,596,411	\$5,347	\$5,507	\$5,672	\$21,422	\$6,018	\$6,198	\$6,384	\$644,561	
\$58,830	\$60,595	\$62,413	\$11,581	\$11,928	\$12,286	\$12,655	\$13,034	\$13,425	\$13,828	
\$198,753	\$122,593	\$78,745	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>\$328,071</b>	<b>\$1,798,562</b>	<b>\$476,306</b>	<b>\$37,207</b>	<b>\$56,020</b>	<b>\$73,281</b>	<b>\$40,657</b>	<b>\$41,877</b>	<b>\$456,170</b>	<b>\$944,989</b>	Building Architectural Sub-Total
\$34,514	\$31,882	\$32,838	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0	<b>Dwelling Units</b> Living Areas Bathrooms Kitchens Mechanical & Electrical
\$33,791	\$22,532	\$23,208	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768	
\$51,145	\$44,374	\$45,705	\$0	\$0	\$27,584	\$0	\$0	\$0	\$0	
\$114,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
<b>\$234,376</b>	<b>\$98,788</b>	<b>\$101,751</b>	<b>\$7,343</b>	<b>\$7,563</b>	<b>\$39,502</b>	<b>\$8,024</b>	<b>\$8,264</b>	<b>\$8,512</b>	<b>\$8,768</b>	Dwelling Units Sub-Total
<b>\$715,009</b>	<b>\$2,013,599</b>	<b>\$675,694</b>	<b>\$76,123</b>	<b>\$96,104</b>	<b>\$308,322</b>	<b>\$83,182</b>	<b>\$921,191</b>	<b>\$501,285</b>	<b>\$1,177,065</b>	<b>Total Capital Costs</b>

Projected Capital Needs Over Twenty Years

SITE SYSTEMS

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
SURFACE									
	99,256								Asphalt; broken and cracked surfaces, sections repaired
Roadways/Parking	49,628 sf	2.25	\$111,663		varies	20	1 /11	over 3 Years	Costs to resurface @50%/cycle
Roadways/Parking (Green)	sf								
	99,256	0.35	\$34,740		varies	10	6 /16	in 1 Year	Periodic asphalt surface repairs (crack fill, potholes, etc.).
Roadway/Parking Repairs	49,256 sf	0.35	\$17,240		varies	5	1 /11	in 1 Year	Allowances for full and interim partial repairs
Roadway/Parking Repairs (Green)	sf								
	29,280				100				Concrete, asphalt, and brick surfaces. Fair to poor cond.
Pedestrian Paving	14,640 sf	2.00	\$29,280		varies	10	1 /11	over 3 Years	Costs to repair @50%/cycle
									Chain link safety fencing at auditorium & east access
Fencing	1,540 lf	25.00	\$38,500		varies	20	1	over 3 Years	Costs to replace
Fencing (Green)	sf								
									Rubberized surface, plastic and metal play equipment
Playground-Child Development	1 ls	50000.00	\$50,000		20	20	1	in 1 Year	Costs to replace
Playground-Child Development (Green)	lf								
									LED pole mounted fixtures
Site Lighting	2 ea	2250.00	\$4,500		2	20	18	in 1 Year	Future replacement costs
Site Lighting (Green)	lf								
									Concrete retaining walls at parking area, several cracks
Retaining Walls	1 ls	10000.00	\$10,000		100	10	1 /11	in 1 Year	Periodic repair allowances
									HID pole mounted fixtures
Site Lighting	10 ea	1800.00	\$18,000		20+	20	1	over 3 Years	Costs to replace
Site Lighting (Green)	10 ea	2050.00	\$20,500	\$2,500	20	20	1	E1 over 3 Years	Install LED Fixtures

ACCESSIBILITY

Circulation	1 ls				Add	10			Add elevators (see "Building Mechanical" section)
Circulation (Green)	ls								
Restrooms	1 ls	750000.00	\$750,000		100	60	1	in 1 Year	Restrooms: upgrade to current accessibility stand.
Restrooms (Green)	ea								
Locker Rooms	1 ls	500000.00	\$500,000		100	60	1	in 1 Year	Locker Rms upgrade to current accessibility stand.
Locker Rooms (Green)	ea								
Miscellaneous	ls								



Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
SURFACE																				
Roadways/Parking	\$37,221	\$38,338	\$39,488	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,022	\$51,523	\$53,068	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roadways/Parking (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roadway/Parking Repairs	\$17,240	\$0	\$0	\$0	\$0	\$40,273	\$0	\$0	\$0	\$0	\$23,169	\$0	\$0	\$0	\$0	\$54,123	\$0	\$0	\$0	\$0
Roadway/Parking Repairs (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pedestrian Paving	\$9,760	\$10,053	\$10,354	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,117	\$13,510	\$13,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fencing	\$12,833	\$13,218	\$13,615	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fencing (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Playground-Child Development	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Playground - Child Dev. (Grren)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,438	\$0	\$0
Site Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Retaining Walls	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting	\$6,000	\$6,180	\$6,365	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Site Lighting (Green)	\$6,833	\$7,038	\$7,249	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ACCESSIBILITY																				
Circulation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Circulation (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Restrooms	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Restrooms (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Rooms	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Rooms (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

MECHANICAL ROOM

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)										Notes	
BOILERS																		
																	NG-fired HB Smith sectional steam boilers	
Boilers-Freshman Building	2 ea	190,000	\$380,000		53	40+	1							in	1 Year		Costs per recent old bldg replacement	
Boilers-Freshman Building (Green)	2 ea	304,000	\$608,000	\$228,000	53	40	1						E2	in	1 Year		NG-fired HB Smith sectional steam boilers Upgd to high eff. boilers hydronic (±96% AFUE)	
Boilers-Old Building	1 ea	190,000	\$190,000		53	40+	1							in	1 Year		NG-fired HB Smith sectional steam boilers Costs per recent old bldg replacement	
Boilers-Old Building (Green)	1 ea	304,000	\$304,000	\$114,000	53	40	1						E2	in	1 Year		NG-fired HB Smith sectional steam boilers Upgd to high eff. boilers hydronic (±96% AFUE)	
Boilers-Old Building	1 ea				5	40											NG-fired HB Smith sectional steam boilers Monitor	
Boilers-Old Building (Green)	1 ea	30,000	\$30,000	\$30,000	5	40	1						E2	in	1 Year		NG-fired HB Smith sectional steam boilers Convert to Hydronic	
Controls	1 ls	71,500	\$71,500		100	3	1	4	7	10	13	16	19		over	3 Years		Panels, devices, & valves. Some recent replacements Periodic costs to repair/replace
Controls (Green)	1 ls	650,000	\$650,000	\$578,500	100	15	1							E3	in	1 Year		Demo & Upgrade to digital energy management system (EMS)
Pneumatic Compressors	1 ea	6,720	\$6,720		5	15	10								1			Multi-stage air compressor packages. One recently replaced
	1 ea	6,720	\$6,720		varies	15	1	16						in	1 Year			Costs to replace
Pneumatic Compressors (Green)	ea																	Not replaced if upgrade to EMS is chosen
Hydronic Circulation Pumps	4 ttl																	Standard duty base-mounted 5-HP pumps
	1 ea	3,360	\$3,360		varies	20	1	6	11	16				in	1 Year			Periodic costs to replace one pump assembly
Hydronic Circulation Pumps (Green)	4 ttl																	Install premium duty pumps
	1 ea	4,500	\$4,500	\$1,140	varies	20	1	6	11	16				E4	in	1 Year		Periodic costs to replace one pump assembly
Hydronic Circulation Pumps	4 ea																	Standard duty Base-mounted 1 hp pumps
	1 ea	2,350	\$2,350		varies	20	1	6	11	16				in	1 Year			Periodic costs to replace one pump assembly
Hydronic Circulation Pumps (Green)	4 ttl																	Premium Duty base-mounted 1-HP pumps
	1 ea	3,300	\$3,300	\$950	varies	20	1	6	11	16				E4	in	1 Year		Periodic costs to replace one pump assembly
Heating Circulation Pumps	ea																	
Heating Circulation Pumps (Green)	8 ea	8,500	\$68,000	\$68,000	Add	20	1							in	1 Year			Add Hydronic circulation pumps w/new boiler syst
Condensate & Feed Water	1 ea	100,350	\$100,350		5	25	20							in	1 Year			Not replaced if upgrade to HE hydronic boilers
	1 ea	100,350	\$100,350		53	25	1							in	1 Year			Costs to replace
Miscellaneous	ea																	
Add Cooling Towers (Green)	3 ea	24,000	\$72,000	\$72,000	Add	20	1							in	1 Year			Add cooling tower for class room "Heatpump" syst.
Miscellaneous	ea																	
Miscellaneous (Green)	ea																	

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
BOILERS																				
Boilers-Freshman Building	\$380,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Freshman Building (Green)	\$608,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building	\$190,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building (Green)	\$304,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boilers-Old Building (Green)	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Controls	\$23,833	\$24,548	\$25,285	\$26,043	\$26,825	\$27,629	\$28,458	\$29,312	\$30,191	\$31,097	\$32,030	\$32,991	\$33,981	\$35,000	\$36,050	\$37,132	\$38,246	\$39,393	\$40,575	\$41,792
Controls (Green)	\$650,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pneumatic Compressors	\$6,720	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,768	\$0	\$0	\$0	\$0	\$0	\$10,470	\$0	\$0	\$0	\$0
Pneumatic Comp (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydronic Circulation Pumps	\$3,360	\$0	\$0	\$0	\$0	\$3,895	\$0	\$0	\$0	\$0	\$4,516	\$0	\$0	\$0	\$0	\$5,235	\$0	\$0	\$0	\$0
Hyd Circ Pumps (Green)	\$4,500	\$0	\$0	\$0	\$0	\$5,217	\$0	\$0	\$0	\$0	\$6,048	\$0	\$0	\$0	\$0	\$7,011	\$0	\$0	\$0	\$0
Hydronic Circulation Pumps	\$2,350	\$0	\$0	\$0	\$0	\$2,724	\$0	\$0	\$0	\$0	\$3,158	\$0	\$0	\$0	\$0	\$3,661	\$0	\$0	\$0	\$0
Hyd Circ Pumps (Green)	\$3,300	\$0	\$0	\$0	\$0	\$3,826	\$0	\$0	\$0	\$0	\$4,435	\$0	\$0	\$0	\$0	\$5,141	\$0	\$0	\$0	\$0
Heating Circulation Pumps	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heating Circ Pumps (Green)	\$68,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Condensate & Feed Water	\$100,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$175,964
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Cooling Towers (Green)	\$72,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

MECHANICAL ROOM--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
BOILER ROOM SYSTEMS									
									Exten network,steam/hydronic control valves/piping
Boiler Room Piping/Valves	1 ls	200000.00	\$200,000		varies	25	1	over 20 Years	Annual allowances to maintain as needed
Boiler Room Piping/Valves (Green)	ea								
Heat Exchanger-Steam/Water	5 ea	1000.00	\$5,000		53	40	1	in 1 Year	Steam to Water shell and tube HXs various sizes
Heat Exchanger-Steam/Water (Green)	ea								Allowances to clean and inspect
DHW - Old Building	1 ea	10000.00	\$10,000		8	20	12	in 1 Year	Lochinvar gas-fired 495-MBH
DHW - Old Building (Green)	1 ea	15500.00	\$15,500	\$5,500	8	20	12	E5 in 1 Year	Costs to replace
DHW - Freshman Building	1 ea	10000.00	\$10,000		4	20	16	in 1 Year	Replace with high efficiency condensing boiler
DHW - Freshman Building (Green)	1 ea	15500.00	\$15,500	\$5,500	4	20	16	E5 in 1 Year	Lockinvar gas-fired 495-MBH
DHW Storage - Old Building	2 ea	2000.00	\$4,000		5	10	5 15	in 1 Year	Costs to replace
DHW Storage - Old Building (Green)	2 ea	2500.00	\$5,000	\$1,000	5	25	5	G1 in 1 Year	Lockinvar glass-lined storage tanks
DHW Storage-Freshman Bldg.	1 ea	12466.00	\$12,466		33	20	1	in 1 Year	Upgrade to stainless steel storage tanks
DHW Storage-Freshman Bldg. (Green)	6 ea	2500.00	\$15,000	\$2,534	33	25	1	G1 in 1 Year	≈750-gal storage tank
Domestic Hot/Cold Water	1 ls	20000.00	\$20,000		varies	50	1	over 20 Years	Costs to replace
Domestic Hot/Cold Water (Green)	ea								
Heat-Hydronic Dist Syst	1 ls	100000.00	\$100,000		varies	50	1	over 20 Years	Hydronic Heat distribution. Steam syst antiquated
Heat-Hydronic Dist Syst (Green)	ea								Allowances to maintain
Heat-Steam Dist Syst	1 ls	700000.00	\$750,000		varies	50	1	over 20 Years	Steam tramps, recievers etc.
Estimate pending engineering survey									
Heat-Steam Dist Syst (Green)	1 ea	1000000.00	\$1,000,000	\$250,000	varies	50	1	E2 in 1 Year	Annual allowances to maintain
Auditorium Heat/Ventilation	1 ls	35000.00	\$35,000		???	30	1	in 1 Year	Steam heat fan units
Estimate pending engineering survey									
Auditorium Heat/Ventilation (Green)	1 ls	80000.00	\$80,000	\$45,000	???	30	1	in 1 Year	Replace with hydronic
Miscellaneous	ea								Steam heat fan units
									Replace with gas-fired rooftop packaged HVAC

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
BOILER ROOM SYSTEMS																				
Boiler Room Piping/Valves	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$11,593	\$11,941	\$12,299	\$12,668	\$13,048	\$13,439	\$13,842	\$14,258	\$14,685	\$15,126	\$15,580	\$16,047	\$16,528	\$17,024	\$17,535
Boiler Room Piping/Valves (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exchanger-Steam/Water	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat Exch-Steam/Water(Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Old Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,842	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Old Building (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,456	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW - Freshman Building	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
DHW-Freshman Bldg (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,148	\$0	\$0	\$0	\$0
DHW Storage - Old Building	\$0	\$0	\$0	\$0	\$4,502	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,050	\$0	\$0	\$0	\$0	\$0
DHW Storage-Old Bld (Green)	\$0	\$0	\$0	\$0	\$5,628	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage-Freshman Bldg.	\$12,466	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DHW Storage-Fresh.Bldg (Green)	\$15,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Domestic Hot/Cold Water	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469	\$1,513	\$1,558	\$1,605	\$1,653	\$1,702	\$1,754
Domestic Hot/Cold Water (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat-Hydronic Dist Syst	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$6,524	\$6,720	\$6,921	\$7,129	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768
Heat-Hydronic Dist Syst (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat-Steam Dist Syst	\$37,500	\$38,625	\$39,784	\$40,977	\$42,207	\$43,473	\$44,777	\$46,120	\$47,504	\$48,929	\$50,397	\$51,909	\$53,466	\$55,070	\$56,722	\$58,424	\$60,176	\$61,982	\$63,841	\$65,756
Heat-Steam Dist Syst (Green)	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Auditorium Heat/Ventilation	\$35,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Auditorium Heat/Ventilation (Green)	\$80,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING MECHANICAL AND ELECTRICAL

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)					Notes		
BUILDING MECHANICAL														
Security Surveillance - CCTV	1 ls	10000.00	\$10,000		10	# 20	1	6	11	16	in	1 Year	Extensive closed circuit television syst (CCTV) Allowances for periodic replacements and upgrades	
Building Fire Suppression	1 ls				≈20	50+							Limited Fire Sprinkler, street pressure system Monitor	
Building Distribution Systems	1 ls	60000.00	\$60,000		varies	50	1				over	20 Years	Sanitary waste & vent system aging Allowances for annual repairs	
Classroom Steam Ventilators	1 ls	1250000.00	\$1,250,000		varies	35	1				over	6 Years	Various ages classroom heat/ventilation units Upgrade to hydronic "Heat Recovery" Models	
Classroom Hydronic Ventilators	1 ls	2250000.00	\$2,250,000	\$1,000,000	varies	35	1				E6	in	1 Year	Estimate includes demo Repl. w/Classroom "Heatpump" ventilators
Building Air Conditioning	3 ea	Average												Split System air conditioners, selected areas Costs to replace condenser units
	1 ea	3500.00	\$3,500		varies	20	1	10	20		in	1 Year		
Building Air Conditioning (Green)	3 ea	Average												Replace w/SEER 18 rated models Interior mounted ventiation and heat units Costs to replace
	1 ea	5500.00	\$5,500	\$2,000	varies	20	1	10	20		E7	in	1 Year	
Heat/Vent-Gym/Locker Rms	6 ea	15000.00	\$90,000		53	50	1				over	3 Years	Interior mounted ventilation and heat units Repl with "Heat Recovery" models	
Heat/Vent-Gym/Locker Rms (Green)	6 ea	20000.00	\$120,000	\$30,000	53	50	1				E14	in	1 Year	J. C. roof top ventilators w/hydronic heat Costs to replace
Heat/Ventilation-Old Bldg	5 ea	Average												J. C. roof top ventilators w/hydronic heat Repl with "Heat Recovery" models
	5 ea	30000.00	\$150,000		53	20	1				over	2 Years		
Heat/Ventilation-Old Bldg (Green)	5 ea	40000.00	\$200,000	\$50,000	53	20	1				E9	over	2 Years	Mushroom type various sizes 24" sq. to 36"sq. Cost to replace half now and half in future
Exhaust Fans Rooftop	26 ttl													Upgrade to premium duty motors
	13 ea	1500.00	\$19,500		varies	15	1	16			in	1 Year		
Exhaust Fans Rooftop (Green)	13 ea	2250.00	\$29,250	\$9,750	varies	15	1	16			in	1 Year		

BUILDING ELECTRICAL

Building Power Wiring	1 ls	500000.00	\$500,000		varies	99	1				over 5 Years	Ages and brands of manufacture vary Allowances to upgrade as needed
Emergency Generator	1 ea				30±	35						Onan 7.5 kW gas-fired generator for Town telephone syst.
Emergency Lights	1 ls	25000.00	\$25,000		varies	10	1	11			over 10 Years	Mix of wet battery and dry battery units Annual allowances to repair/replace
Smoke / Fire Detection	2 ls	167000.00	\$334,000		2	20	18				in 1 Year	Addressable systems Future replacement costs
	1 ea	167000.00	\$167,000		2	20	18				in 1 Year	Zoned system Older bldg. Replacement costs.
Smoke / Fire Detection	1 ls	25000.00	\$25,000		2	20	1				in 1 Year	Allow to repl field devices/upgrade to addressable

BUILDING ELEVATORS

Existing Elevator System	1 ea				100	35						Atlas hydraulic-type elevator Maintained by a full service contract
Cabs	1 ea	75000.00	\$75,000		33	20	1				in 1 Year	Allowance to upgrade cab/door operators Provide additional access to Old/Freshman Bldgs.
Add Elevators, Impv. ADA Access	2 ea	225000.00	\$450,000		ADD	35	1				in 1 Year	Estimated costs to add additional elevators Hydromechanical package/controls
Machine Room Equipment	1 ea	85000.00	\$85,000		33	35	1				in 1 Year	Costs to replace

BUILDING MECHANICAL AND ELECTRICAL

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
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BUILDING MECHANICAL

Security Surveillance - CCTV	\$10,000	\$0	\$0	\$0	\$0	\$11,593	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
Building Fire Suppression	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Distribution Systems	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377	\$3,478	\$3,582	\$3,690	\$3,800	\$3,914	\$4,032	\$4,153	\$4,277	\$4,406	\$4,538	\$4,674	\$4,814	\$4,959	\$5,107	\$5,261
Classroom Steam Ventilators	\$208,333	\$214,583	\$221,021	\$227,651	\$234,481	\$241,515	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Classroom Hydronic Ventilators	\$2,250,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Air Conditioning	\$3,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,567	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,137
Building Air Conditioning (Green)	\$5,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,176	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,644
Heat/Vent-Gym/Locker Rms	\$30,000	\$30,900	\$31,827	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Vent-Gym/Locker Rms (Green)	\$120,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Ventilation-Old Bldg	\$75,000	\$77,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heat/Ventilation-Old Bldg (Green)	\$100,000	\$103,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exhaust Fans Rooftop	\$19,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,380	\$0	\$0	\$0	\$0
Exhaust Fans Rooftop (Green)	\$29,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,571	\$0	\$0	\$0	\$0

BUILDING ELECTRICAL

Building Power Wiring	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Generator	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Emergency Lights	\$2,500	\$2,575	\$2,652	\$2,732	\$2,814	\$2,898	\$2,985	\$3,075	\$3,167	\$3,262	\$3,360	\$3,461	\$3,564	\$3,671	\$3,781	\$3,895	\$4,012	\$4,132	\$4,256	\$4,384
Smoke / Fire Detection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$552,051	\$0	\$0
Smoke / Fire Detection	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$276,026	\$0	\$0
Existing Elevator System	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabs	\$75,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Add Elevators, Impv. ADA Access	\$450,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Machine Room Equipment	\$85,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)		Notes
STRUCTURE									
Foundation	2,828 lf				varies	100+			Concrete - Isolated area of spalling noted at auditorium & parking failing, parts of freshman bldg courtyard area: Repair allowances incl. with exterior walls
Boiler Room Floor-Old Buildings	1 ls 11 ea	45000.00	\$45,000		0	1	1	in 1 Year	Water infil. allowance for hydrostatic testing
Stairs - Masonry	1 ls	40000.00	\$40,000		varies	100+	1	over 20 Years	Concrete/granite, at rear of older bldg portion exhibit most wear. Annual repair allowances
Stairs - Wood	3 ea	3500.00	\$10,500		33	33	1	in 1 Year	Pressure treated wood at cafeteria courtyard Costs to replace
BUILDING EXTERIOR									
Exterior Common Doors	68 ea	2500.00	\$170,000		33	35	1	over 3 Years	Wood/metal & aluminum/glass doors Costs to replace
Exterior Common Doors (Green)	68 ea	3500.00	\$238,000	\$68,000	33	35	1	E11 over 3 Years	Wood/metal & aluminum/glass doors Upgrade with efficient lower U-value fiberglass
Service Doors	26 ea	1200.00	\$31,200		33	35	1	over 3 Years	Single/double leaf steel doors & overhead doors Costs to replace
Service Doors (Green)	26 ea	1500.00	\$39,000	\$7,800	33	35	1	E11 over 3 Years	Single/double leaf steel doors & overhead doors Repl w/insulated fiberglass models
Glass Sliding Doors	1 ea	2500.00	\$2,500		33	35	1	in 1 Year	Aluminum framed door at courtyard by cafeteria Costs to replace
Glass Sliding Doors (Green)	1 ea	3500.00	\$3,500	\$1,000	33	35	1	E12 in 1 Year	Aluminum framed door at courtyard by cafeteria Replace with insulated fiberglass model
Clock Steeple	1 ls	65000.00	\$65,000		100	20	1	in 1 Year	Clock steeple, old bldg. cosmetic/structural deterioration. Allowance to historically restore
Hazardous Material Abatement	1 ls	10000000.00	\$10,000,000		100	100	1	in 1 Year	Allowance to ab ate all areas
Exterior Walls-Brick Masonry	108,806 ttl sf 27,202 sf	8.00	\$217,616		100	6	7 13 19	in 1 Year	Recent repointing/waterproofing work done. Allowances for future cycles @25% of total
Exterior Walls-Brick Masonry (Green)	sf								
Exterior Walls-Block Masonry	37,436 ttl sf 18,718 sf	8.00	\$149,744		33	15	5 20	in 1 Year	Freshman bldg/connector recent joint caulking Future allow for repointing/waterproofing @50%
Exterior Walls-Block Masonry (Green)	sf								
Trim, Soffit, Fascia	1 ls	25000.00	\$25,000		10	10	1 11	in 1 Year	Painted cornice & columns at older portion of bldg, Allowances to repair, scrape & paint.
Faux Balcony-Main Entry	1 ls	25000.00	\$25,000		100	20	1 19	in 1 Year	Balcony over main entry at front of bldg; Allowances for historic restoration
Faux Balcony-Main Entry (Green)	lf								
Exterior Ceilings	2,080 sf 17 ttl				33	60			Stained & sealed natural wood at link section Operating
Building Mounted Lighting	15 ea	1250.00	\$18,750		varies	20	1	over 3 Years	High intensity discharge (HID) fixtures, some LED Costs to replace
Building Mounted Lighting (Green)	15 ea	1650.00	\$24,750	\$6,000	varies	20	1	E1 over 3 Years	High intensity discharge (HID) fixtures, some LED Replace all with long life efficient LED fixtures



**Arlinton High School**  
**BUILDING ARCHITECTURE**

*Costs projected at 3%*

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
<b>STRUCTURE</b>																				
Foundation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Boiler Room Floor-Old Buildings	\$45,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stairs - Masonry	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251	\$2,319	\$2,388	\$2,460	\$2,534	\$2,610	\$2,688	\$2,768	\$2,852	\$2,937	\$3,025	\$3,116	\$3,209	\$3,306	\$3,405	\$3,507
Stairs - Wood	\$10,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>BUILDING EXTERIOR</b>																				
Exterior Common Doors	\$56,667	\$58,367	\$60,118	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Common Doors (Green)	\$79,333	\$81,713	\$84,165	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Doors	\$10,400	\$10,712	\$11,033	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Service Doors (Green)	\$13,000	\$13,390	\$13,792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glass Sliding Doors (Green)	\$3,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Clock Steeple	\$65,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Haz Mat Abatement	\$10,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls-Brick Masonry	\$0	\$0	\$0	\$0	\$0	\$0	\$259,845	\$0	\$0	\$0	\$0	\$0	\$310,268	\$0	\$0	\$0	\$0	\$0	\$370,477	\$0
Ext Walls-Brick Msrny (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Walls-Block Masonry	\$0	\$0	\$0	\$0	\$168,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$262,577
Ext Walls-Brick Msrny (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Trim, Soffit, Fascia	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Faux Balcony-Main Entry	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$42,561	\$0
Faux Balc-Main Entry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Exterior Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Mounted Lighting	\$6,250	\$6,438	\$6,631	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bldg Mounted Lghtng (Green)	\$8,250	\$8,498	\$8,752	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)	Notes
BUILDING EXTERIORS (cont.)								
Windows - Older	371 ea	Average 2725.00	\$1,010,975		53+	35	1 over 3 Years	Steel/wood framed double-hung & casement style windows, no double-glazing; Replacement costs
Windows - Older (Green)	371 ea	Average 3000.00	\$1,113,000	\$102,025	53+	40	1 E12 over 3 Years	Steel/wood framed double-hung & casement style Install insulated, fiberglass fr, dbl glazed, low-E
Windows - Newer	565 ea	Average 2725.00	\$1,539,625		34	35	1 over 3 Years	Aluminum fr fixed panel & awning style windows Costs to replace
Windows - Newer (Green)	565 ea	Average 3000.00	\$1,695,000	\$155,375	34	40	1 E12 over 3 Years	Aluminum fr fixed panel & awning style windows Install insulated, fiberglass fr, dbl glazed, low-E
Window Caulking	936 ea	75.00	\$70,200		Future	10	15 over 6 Years	Window edge weather caulking Allowance for future replacement
Window Caulking (Green)	ea							
Window Sills/Lintels	936 ea	75.00	\$70,200		varies	10	1 11 over 6 Years	Rusted lintels at most windows; Scrape & paint Several spalled/deteriorated concrete sills; Replace
Unit Balconies	ea							
Unit Balconies (Green)	ea							
Unit Patios	ea							
Unit Patios (Green)	ea							
Miscellaneous	ea							
Miscellaneous (Green)	ea							
ROOF SYSTEMS								
Structure	122,544 sf				100	50		Mix of flat and pitched surfaces Monitor
Roof Covering - Membrane	79,278 sf	14.50	\$1,149,531		13	25	12 in 1 Year	Thermoplastic Polyolefin membrane roofing (T.P.O.) Future replacement costs
Roof Covering - Membrane (Green)	sf							
Roof Covering - Membrane	25,092 sf	14.50	\$363,834		5	25	20 in 1 Year	Thermoplastic Polyolefin membrane roofing (T.P.O.) Future replacement costs
Roof Covering - Membrane (Green)	sf							
Roof Covering - Slate	7,452 sf 1 ls	15000.00	\$15,000		33	4	1 5 9 13 17 over 4 Years	Slate shingles, isolated cracked/missing slates Annual repair allowances
Roof Covering Metal	10,722 sf 1 ea	10000.00	\$10,000		33	60+	1 11 16 in 1 Year	Standing seam at Blue Gym, connector, & link. Blow-off sections noted. Periodic repair allowances
Chimneys	2 ea				100	20		Brick chimneys Needs included with exterior walls

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
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BUILDING EXTERIORS (cont.)

Windows - Older	\$336,992	\$347,101	\$357,514	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Older (Green)	\$371,000	\$382,130	\$393,594	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Newer	\$513,208	\$528,605	\$544,463	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Windows - Newer (Green)	\$565,000	\$581,950	\$599,409	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Caulking	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,697	\$18,228	\$18,775	\$19,338	\$19,918	\$20,516
Window Caulking (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Window Sills/Lintels	\$11,700	\$12,051	\$12,413	\$12,785	\$13,168	\$13,564	\$0	\$0	\$0	\$0	\$15,724	\$16,196	\$16,681	\$17,182	\$17,697	\$18,228	\$0	\$0	\$0	\$0
Unit Balconies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Balconies (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Unit Patios (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

ROOF SYSTEMS

Structure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Membrane	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,591,220	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Cov-Membrane (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Membrane	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$637,985
Roof Cov-Membrane (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Roof Covering - Slate	\$3,750	\$3,863	\$3,978	\$4,098	\$4,221	\$4,347	\$4,478	\$4,612	\$4,750	\$4,893	\$5,040	\$5,191	\$5,347	\$5,507	\$5,672	\$5,842	\$6,018	\$6,198	\$6,384	\$6,576
Roof Covering Metal	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,439	\$0	\$0	\$0	\$0	\$15,580	\$0	\$0	\$0	\$0
Chimneys	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes
HALLS											
	119,207 ttl sf										Glazed/painted masonry & drywall w/acoustic tile
Hallway Walls and Ceilings	101,277 sf	0.90	\$91,149		varies	10	1	11		over 3 Years	above lockers: Costs to maintain painted surfaces
Hallway Walls and Ceilings (Green)	101,277 sf	0.90	\$91,149	\$0	varies	10	1	11		over 3 Years	Glazed/painted masonry & drywall w/acoustic tile above lockers: Spaecify low-VOC content paint
	29,557 sf	5.00	\$147,785		0	15	15			over 15 Years	Future annual replacement cycle
Hallway Floors	29,557 sf	5.00	\$147,785		33	15	1			over 3 Years	VCT poor condition Costs to replace all
Hallway Floors (Green)	29,557 sf	6.50	\$192,121	\$44,336	33	25	1		G2	over 3 Years	Existing VCT poop condition Replace with natural linoleum flooring
Hallway Doors	62 ea	2500.00	\$155,000		33/53	30	1			over 3 Years	Steel fire doors in steel frames most failing Costs to replace
Hallway Doors (Green)	sf										
Building Interior Lighting	1 ls	750000.00	\$750,000		varies	20	1			over 3 Years	Ceiling mounted/hung fluorescent fixtures. Most old Costs to replace
Building Interior Lighting (Green)	1 ls	1000000.00	\$1,000,000	\$250,000	varies	20	1		E13	over 3 Years	Ceiling mounted/hung fluorescent fixtures. Most old Install LED long-life efficient LED fixtures
Hallway Heating	ea										
Hallway Heating (Green)	ea										
Lockers	Estimate 2,000 ea	350.00	\$700,000		varies	35	1			over 3 Years	Steel lockers throughout facility Costs to replace
Miscellaneous	ea										
Miscellaneous (Green)	ea										
STAIRS											
	26,916 ttl sf										Glazed/painted masonry & drywall w/acoustic tile
Stair Walls and Ceilings	18,353 sf	0.90	\$16,518		varies	10	1	11		over 3 Years	Costs to maintain painted surfaces
Stair Walls and Ceilings (Green)	18,353 sf	0.90	\$16,518	\$0	varies	10	1	11		over 3 Years	Glazed/painted masonry & drywall w/acoustic tile Specify low-VOC content paint
Stair Floors	7,886 sf	20.00	\$157,720		varies	20	1			over 20 Years	Rubber stair treads Costs to replace as needed
Stair Floors (Green)	sf										
Stair Interior Lighting	ea										
Stair Interior Lighting (Green)	ea										
Stair Doors	64 ea	2500.00	\$160,000		varies	35	1			over 3 Years	Steel fire doors in steel frames most failing Costs to replace
Stair Railings	1 ea				varies	10					Steel railings and balustrades Periodic painting included with walls

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
<b>HALLS</b>																				
Hallway Walls and Ceilings	\$30,383	\$31,295	\$32,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,832	\$42,057	\$43,319	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls & Ceilings (Green)	\$30,383	\$31,295	\$32,233	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,832	\$42,057	\$43,319	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Floors	\$49,262	\$50,740	\$52,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,903	\$15,350	\$15,810	\$16,284	\$16,773	\$17,276
Hallway Floors (Green)	\$64,040	\$65,961	\$67,940	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Doors	\$51,667	\$53,217	\$54,813	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Doors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Building Interior Lighting	\$250,000	\$257,500	\$265,225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bld Int Lighting (Green)	\$333,333	\$343,333	\$353,633	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hallway Heating (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lockers	\$233,333	\$240,333	\$247,543	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>STAIRS</b>																				
Stair Walls and Ceilings	\$5,506	\$5,671	\$5,841	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,399	\$7,621	\$7,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Walls and Ceilings (Green)	\$5,506	\$5,671	\$5,841	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,399	\$7,621	\$7,850	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Floors	\$7,886	\$8,123	\$8,366	\$8,617	\$8,876	\$9,142	\$9,416	\$9,699	\$9,990	\$10,289	\$10,598	\$10,916	\$11,244	\$11,581	\$11,928	\$12,286	\$12,655	\$13,034	\$13,425	\$13,828
Stair Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Interior Lighting (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Doors	\$53,333	\$54,933	\$56,581	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Stair Railings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)			Notes
CLASSROOMS										Painted surfaces
Walls & Ceilings	133,958 sf	0.90	\$120,562		varies	10	1	11	over 3 Years	Repainting allowances
Walls & Ceilings (Green)	133,958 sf	0.90	\$120,562	\$0	varies	10	1	11	over 3 Years	Painted surfaces Specify low-VOC content paint
	42,302 sf	5.00	\$211,510		0	15	10		over 15 Years	Future replacement cycles
Floors	42,320 sf	5.00	\$211,600		33+	15	1		over 3 Years	VCT poor condition Costs to replace
Floors (Green)	42,302 sf	6.50	\$274,963	\$63,363	100	25	1		G2 over 3 Years	VCT poor condition Replace with natural linoleum
Cabinetry	1 ls	Estimate 500000.00	\$500,000		33+	30	1		over 3 Years	Wood storage cabinets in classrooms Costs to replace
Cabinetry (Green)	1 ls									
Cabinetry	1 ls	Estimate 100000.00	\$100,000		33+	30	1		over 3 Years	Wood counters along windows in several classrooms, Costs to replace
Cabinetry (Green)	1 ls									
Science/Lab Fixtures	1 ls	Estimate 750000.00	\$750,000		varies	20	1		over 3 Years	Assumed upgrade to current standards Discuss during client review
Science/Lab Fixtures (Green)	1 ea									
INDUSTRIAL ARTS CLASSROOMS										
Walls/Cielings	30,768 sf	0.90	\$27,691		varies	10	1	11	over 3 Years	Painted brick, concrete, and concrete block Costs for periodic painting
Walls/Cielings (Green)	30,768 ea	0.90	\$27,691	\$0	varies	10	1	11	over 3 Years	Painted brick, concrete, and concrete block Specify low-VOC content paint
Floors	11,625 sf	1.50	\$17,438		varies	10	1	11	over 3 Years	Painted concrete Paint concurrent with walls
Floors (Green)	11,625 sf	1.50	\$17,438	\$0	varies	10	1	11	over 3 Years	Painted concrete Specify low-VOC content paint
MEDIA CENTER										
Walls/Ceiling	29,869 sf	0.90	\$26,882		10	10	1	11	in 1 Year	Painted surfaces Repainting cycles
Walls/Ceiling (Green)	29,869 sf	0.90	\$26,882	\$0	10	10	1	11	in 1 Year	Painted surfaces Specify low-VOC content paint
Floor Covering	6,489 ea	4.00	\$25,956		10	10	1	11	in 1 Year	Carpet Replacement cycles
Floor Covering (Green)	6,489 ea	5.00	\$32,445	\$6,489	10	10	1	11	G3 in 1 Year	Carpet Install CRI Green Label Plus Carpet
Furniture	1 ls	100000.00	\$100,000		10	20	10		over 3 Years	Various tables, chairs, bookshelf's, etc. Allowances to replace
Miscellaneous	1 ea									
Miscellaneous	1 ea									

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
CLASSROOMS																				
Walls & Ceilings	\$40,187	\$41,393	\$42,635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,009	\$55,629	\$57,298	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls & Ceilings (Green)	\$40,187	\$41,393	\$42,635	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,009	\$55,629	\$57,298	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$70,533	\$72,649	\$74,829	\$0	\$0	\$0	\$0	\$0	\$0	\$18,398	\$18,950	\$19,519	\$20,104	\$20,707	\$21,329	\$21,968	\$22,627	\$23,306	\$24,005	\$24,726
Floors (Green)	\$91,654	\$94,404	\$97,236	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0																				
Cabinetry	\$166,667	\$171,667	\$176,817	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry	\$33,333	\$34,333	\$35,363	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cabinetry (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Science/Lab Fixtures	\$250,000	\$257,500	\$265,225	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Science/Lab Fixtures (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Cielings	\$9,230	\$9,507	\$9,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,405	\$12,777	\$13,160	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Cielings (Green)	\$9,230	\$9,507	\$9,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,405	\$12,777	\$13,160	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$5,813	\$5,987	\$6,166	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,812	\$8,046	\$8,287	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$5,813	\$5,987	\$6,166	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,812	\$8,046	\$8,287	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceiling	\$26,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,127	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceiling (Green)	\$26,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,127	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering	\$25,956	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,883	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering (Green)	\$32,445	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,603	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Furniture	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43,492	\$44,797	\$46,141	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit 2014.00	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes
GYMNASIUMS / LOCKER ROOMS											
	<i>Estimate</i>										Steel lockers assemblies, good overall condition
Lockers	500 ea	350.00	\$175,000		33	35	2		in	1 Year	Costs to replace
Shower Partitions	1 ls	100000.00	\$100,000		33	20+	1		over	5 Years	Metal partitions, areas of minor surface rust noted Costs to replace with PVC types
Miscellaneous	0 ea										
Walls and Ceilings	76,773 sf	0.90	\$69,096		10	10	1 11		over	3 Years	Painted surfaces Repainting cycles
Walls and Ceilings (Green)	76,773 sf	0.90	\$69,096	\$0	10	10	1 11		over	3 Years	Painted surfaces Specify low-VOC content paint
Gym Floors	17,105 sf	18.35	\$313,877		10	20	10		in	1 Year	Rubber sheet goods, includes weight room Costs to replace
Gym Floors (Green)	sf										
Locker Room Floors	4,907 ttl 2,944 sf	0.90	\$2,650		5	5	1 6 11 16		in	1 Year	Painted concrete at lockers/ceramic tile at showers Costs to paint concrete - Tile from operating
Locker Room Floors (Green)	4,907 sf 2,944 sf	0.90	\$2,650	\$0	5	5	1 6 11 16		in	1 Year	Painted concrete at lockers/ceramic tile at showers Specify low-VOC content paint
CAFETERIA / KITCHEN											
Walls/Ceilings	22,555 sf	1.50	\$33,833		10	10	1 11		over	3 Years	Painted surfaces/Acoustical ceiling tile Costs to paint and replace ceiling tile
Walls/Ceilings (Green)	22,555 sf	1.50	\$33,833	\$0	10	10	1 11		over	3 Years	Painted surfaces/Acoustical ceiling tile Specify low-VOC content paint
Floor Covering	8,200 ea	5.00	\$41,000		15	15	1 16		over	3 Years	VCT, poor condition Costs to replace
Floor Covering (Green)	8,200 ea	6.50	\$53,300	\$12,300	15	25	1	G2	over	3 Years	VCT, poor condition Repalce with natural linoleum
Kitchen Equipment	1 ls	100000.00	\$100,000		varies	20	1		over	20 Years	Commercial stainless steel Appliances/equipment Annual allowances to replace as needed
Kitchen Equipment (Green)	ea										
Folding Tables	1 ls	350000.00	\$350,000		10	20	10		in	1 Year	Folding metal tables Costs to replace
AUDITORIUM											
Walls	9,851 ea				varies	20					Acoustic wood panels w/small areas of painted drywall Maintain from operating
Walls (Green)	ea										
Ceilings	9,851 ea	0.90	\$8,866		10	10	1 11		in	1 Year	Painted surfaces Repainting cycles
Ceilings (Green)	9,851 ea	0.90	\$8,866	\$0	10	10	1 11		in	1 Year	Painted surfaces Specify low-VOC content paint
Floors - Stage	981 ea				5	5					Laminated wood panels on stage Replaced as needed from operating



Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
<b>GYMNASIUMS / LOCKER ROOMS</b>																				
Lockers	\$0	\$180,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Shower Partitions	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls and Ceilings	\$23,032	\$23,723	\$24,435	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,953	\$31,882	\$32,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls and Ceilings (Green)	\$23,032	\$23,723	\$24,435	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,953	\$31,882	\$32,838	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Gym Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$409,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Gym Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Locker Room Floors	\$2,650	\$0	\$0	\$0	\$0	\$3,072	\$0	\$0	\$0	\$0	\$3,561	\$0	\$0	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0
Locker Room Floors (Green)	\$2,650	\$0	\$0	\$0	\$0	\$3,072	\$0	\$0	\$0	\$0	\$3,561	\$0	\$0	\$0	\$0	\$4,128	\$0	\$0	\$0	\$0
<b>CAFETERIA / KITCHEN</b>																				
Walls/Ceilings	\$11,278	\$11,616	\$11,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,156	\$15,611	\$16,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings (Green)	\$11,278	\$11,616	\$11,964	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,156	\$15,611	\$16,079	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floor Covering	\$13,667	\$14,077	\$14,499	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,292	\$21,931	\$22,589	\$0	\$0
Floor Covering (Green)	\$17,767	\$18,300	\$18,849	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Kitchen Equipment	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	\$5,796	\$5,970	\$6,149	\$6,334	\$6,524	\$6,720	\$6,921	\$7,129	\$7,343	\$7,563	\$7,790	\$8,024	\$8,264	\$8,512	\$8,768
Kitchen Equipment (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Folding Tables	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$456,671	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings	\$8,866	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings (Green)	\$8,866	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,915	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors - Stage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes	
AUDITORIUM - continued												
Floors	2,341 sf	4.00	9,364		15	15	1	16		in 1 Year	Sealed concrete under seats, routine maintenance	
Floors (Green)	2,341 sf	5.00	11,705	\$2,341	15	15	1	16	G3	in 1 Year	Carpet aisle runners & area in front of stage; Repl. costs	
Seats	800± ttl 20 ea	300.00	6,000		varies	20+	1	6	11	16	in 1 Year	Carpet aisle runners & area in front of stage; Install CRI Green Label Plus Carpet
Seats (Green)	ea											Wood veneer seats, peeling veneer & minor damage; Periodic replacement allowances
RESTROOMS												
Walls	13,272 sf 5,972 ea	0.90	5,375		10	10	11			over 3 Years		Mix of ceramic tile, glazed block, & painted surfaces
Walls (Green)	5,972 ea	0.90	5,375	\$0	10	10	11			over 3 Years		First cycle included with ADA Repainting cycles
Ceilings	3,197 ea	0.90	2,877		10	10	11			over 3 Years		Mix of ceramic tile, glazed block, & painted surfaces
Ceilings (Green)	3,197 ea	0.90	2,877	\$0	10	10	11			over 3 Years		Specify low-VOC content paint
Floors	3,197 ea				varies	60						Painted surfaces
Floors (Green)	ea											First cycle included with ADA Repainting cycles
Fixtures & Accessories	1 ls				varies	20+						Painted surfaces
Fixtures & Accessories (Green)	ea											Specify low-VOC content paint
Toilet Partitions	1 ea				varies	20+						Ceramic tile
Toilet Partitions (Green)	ea											Included with ADA Upgrade
SCHOOL OFFICES / SUPPORT SPACES / STORAGE												
Walls/Ceilings	97,687 ea	0.90	87,918		10	10	1	11		over 3 Years		Vitreous toilets, wall mounted sinks, and typical commercial style accessories; Incl in ADA Upgrade
Walls/Ceilings (Green)	97,687 ea	0.90	87,918	\$0	10	10	1	11		over 3 Years		Metal partitions, areas of minor surface rust noted
Floors	15,776 ea	5.00	78,880		15	15	1	16		over 3 Years		Costs to replace with PVC types Incl w/ADA Upg
Floors (Green)	15,776 ea	6.50	102,544	\$23,664	15	25	1		G2	over 3 Years		
Miscellaneous	ea											Painted surfaces
Miscellaneous	ea											Repainting cycles
Miscellaneous	ea											Painted surfaces
Miscellaneous (Green)	ea											Specify low-VOC content paint

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
AUDITORIUM - continued																				
Floors	\$9,364	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,589	\$0	\$0	\$0	\$0
Floors (Green)	\$11,705	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,236	\$0	\$0	\$0	\$0
Seats	\$6,000	\$0	\$0	\$0	\$0	\$6,956	\$0	\$0	\$0	\$0	\$8,063	\$0	\$0	\$0	\$0	\$9,348	\$0	\$0	\$0	\$0
Seats (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,408	\$2,480	\$2,554	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,408	\$2,480	\$2,554	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,289	\$1,328	\$1,367	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Ceilings (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,289	\$1,328	\$1,367	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fixtures & Accessories	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fixtures & Accessories (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilet Partitions	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Toilet Partitions (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings	\$29,306	\$30,185	\$31,091	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,385	\$40,566	\$41,783	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walls/Ceilings (Green)	\$29,306	\$30,185	\$31,091	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,385	\$40,566	\$41,783	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$26,293	\$27,082	\$27,895	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,964	\$42,193	\$43,459	\$0	\$0
Floors (Green)	\$34,181	\$35,207	\$36,263	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Miscellaneous (Green)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Projected Capital Needs Over Twenty Years

BUILDING ARCHITECTURE--continued

Replacement Items	Quantity	Cost / Unit in 2014 \$	Total Cost in 2014 \$	Total Premium	AGE (Years)	EUL (Years)	Replacement Schedule (Year of action AND duration of project)				Notes	
SCHOOL DEPARTMENT OFFICES												
											Painted surfaces	
Wall / Ceilings	7,373 ea	0.90	\$6,636		10	10	1	11		in	1 Year	Repainting cycles
												Painted surfaces
Wall / Ceilings (Green)	7,373 ea	0.90	\$6,636	\$0	10	10	1	11		in	1 Year	Specify low-VOC content paint
												Carpet
Floors	15,776 ea	4.00	\$63,104		varies	10	1	11		in	1 Year	Replacement cycles
												Carpet
Floors (Green)	15,776 ea	5.00	\$78,880	\$15,776	varies	10	1	11	G3	in	1 Year	Install CRI Green Label Plus carpet
												VCT
Floors	359 lf	5.00	\$1,795		15	15	1	16		in	1 Year	Replacement cycles
												VCT
Floors (Green)	359 lf	6.50	\$2,334	\$539	15	25	1		G2	in	1 Year	Install natural linoleum
	ea											
	ea											
	ea											
	ea											
	ea											
	ea											

Costs projected at 3%

Replacement Items	Year 1 2014	Year 2 2015	Year 3 2016	Year 4 2017	Year 5 2018	Year 6 2019	Year 7 2020	Year 8 2021	Year 9 2022	Year 10 2023	Year 11 2024	Year 12 2025	Year 13 2026	Year 14 2027	Year 15 2028	Year 16 2029	Year 17 2030	Year 18 2031	Year 19 2032	Year 20 2033
SCHOOL DEPARTMENT OFFICES																				
Wall / Ceilings	\$6,636	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,918	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Wall / Ceilings (Green)	\$6,636	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,918	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$63,104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$84,806	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors (Green)	\$78,880	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$106,008	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Floors	\$1,795	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,797	\$0	\$0	\$0	\$0
Floors (Green)	\$2,334	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

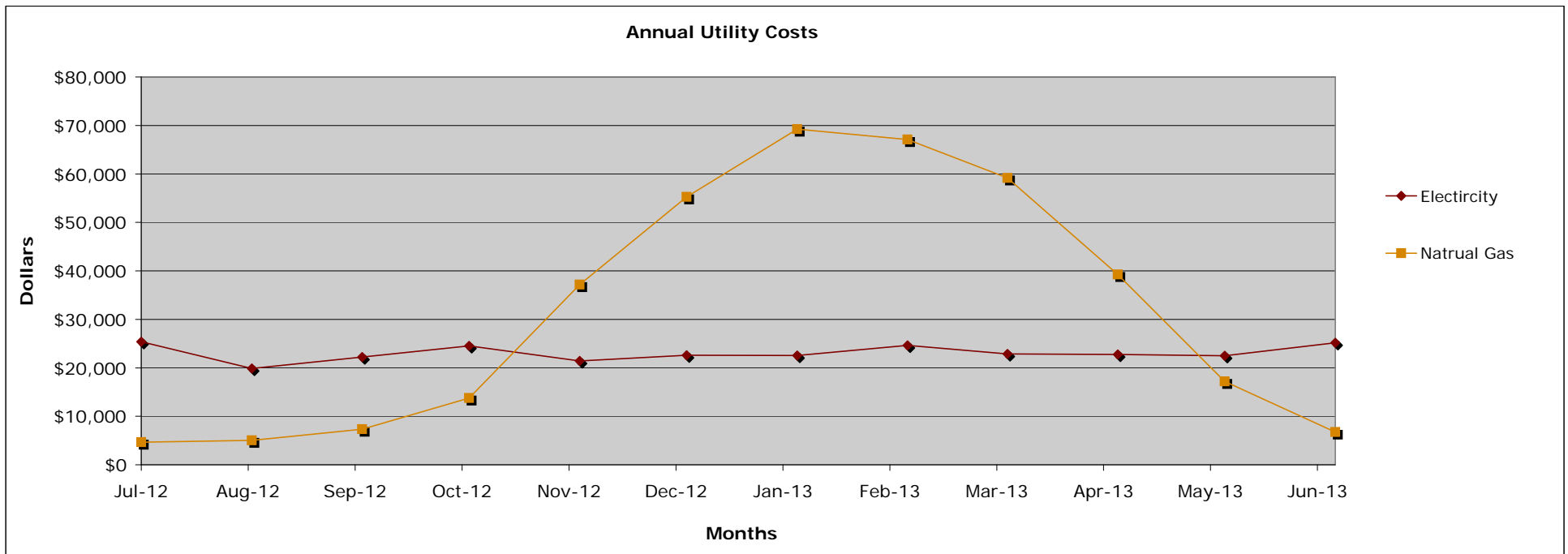
# Energy Analysis

## Utility Usage

Arlington High School

The energy analysis portion of this Energy Audit examines utility bills for the most recent 12 months to summarize at electricity, natural gas, and water/sewer use. The following table and charts show the utility information by utility source, and by monthly and annual consumption.

	ELECTRICITY		NATURAL GAS		WATER / SEWER				OIL		TOTAL
	kWh	\$	Therms	\$	Gallons	Water \$	Sewer \$	Total \$	Gallons	\$	
Jun-13	142,164	\$25,156	6,525	\$6,744							\$31,899
May-13	131,404	\$22,465	22,692	\$17,165							\$39,631
Apr-13	134,844	\$22,763	49,540	\$39,255							\$62,018
Mar-13	132,924	\$22,882	70,477	\$59,162							\$82,044
Feb-13	146,044	\$24,633	80,982	\$67,080							\$91,713
Jan-13	137,444	\$22,522	69,263	\$69,259							\$91,781
Dec-12	132,444	\$22,584	52,989	\$55,239							\$77,823
Nov-12	128,724	\$21,431	32,560	\$37,149							\$58,579
Oct-12	130,284	\$24,521	9,044	\$13,766							\$38,287
Sep-12	110,764	\$22,236	7,119	\$7,333							\$29,569
Aug-12	105,844	\$19,884	7,058	\$5,056							\$24,940
Jul-12	118,284	\$25,359	6,500	\$4,680							\$30,039
<b>Total</b>	<b>1,551,168</b>	<b>\$276,435</b>	<b>414,749</b>	<b>\$381,889</b>							<b>\$658,324</b>
<i>Unit Cost</i>		<i>\$0.178</i>		<i>\$0.9208</i>							

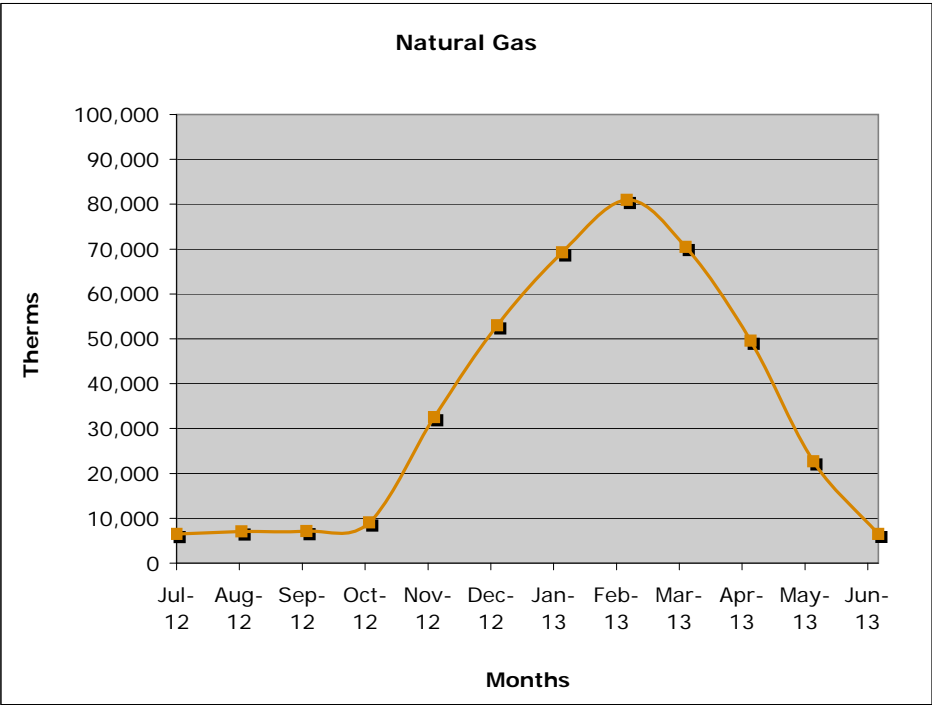
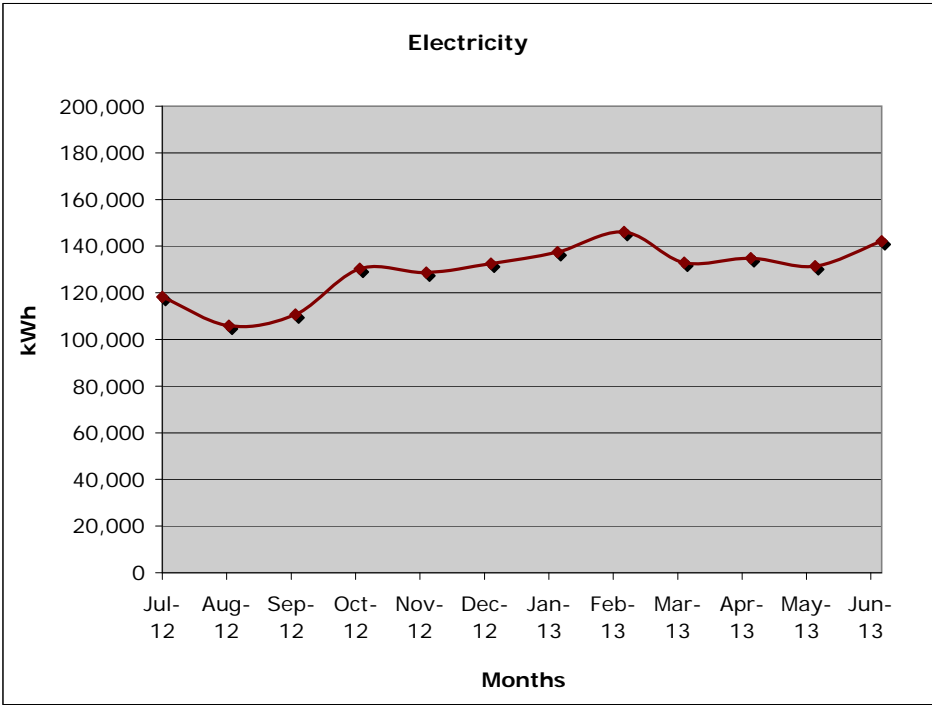


Energy Analysis

Utility Usage, By Type

Arlington High School

Below are graphic presentations of annual usage by utility type for the property.



# Energy Assumptions Table

Below are the energy assumptions by category that were used as inputs for the TREAT model for the property.

These energy assumptions are based on the following:

1. The physical inspection of the property
2. Diagnostic testing conducted during the inspection
3. The historic utility billing information
4. The building blueprints/plans
5. Information provided by site management and maintenance staff

## General

Property Type (Family, Elderly, Commercial): **Institutional**  
Resident Population Persons: **≈750**

## Space Types

Hallways/Stairwells	Square Footage:	<b>37,443</b>	Conditioned:	<b>Yes</b>
Classrooms	Square Footage:	<b>53,945</b>	Conditioned:	<b>Yes</b>
Support/Offices	Square Footage:	<b>276,244</b>	Conditioned:	<b>Yes</b>

## Utility Metering

Whole Building	Utility Type:	<b>Electricity</b>	Individual, Master:	<b>Master</b>
Whole Building	Utility Type:	<b>Natural Gas</b>	Individual, Master:	<b>Master</b>
Whole Building	Utility Type:	<b>Water/Sewer</b>	Individual, Master:	<b>Town</b>

## Infiltration

Infiltration Condition	Tight, Leaky:	<b>Leaky</b>
Infiltration Rate	ACH:	<b>1</b>

## Architectural

Wall Insulation	Type:	<b>None</b>	R-Value:	<b>R-4</b>
Roof Insulation	Type:	<b>Cellulose</b>	R-Value:	<b>R-10</b>
Exterior Doors 1	Type:	<b>Metal/Glass</b>	R-Value:	<b>&lt; R-5</b>
Exterior Doors 2	Type:	<b>Wood/Glass</b>	R-Value:	<b>&lt; R-5</b>
Windows 1	Type:	<b>Aluminum</b>	U-Factor:	<b>1.27</b>
Windows 2	Type:	<b>Wood</b>	U-Factor:	<b>0.87</b>
Windows 3	Type:	<b>Steel</b>	U-Factor:	<b>1.27</b>



## Heating and Cooling

### Temperature Control:

Occupied Heating Temp	Degrees F:	<b>72</b>
Occupied Cooling Temp	Degrees F:	<b>N/A</b>
Unoccupied <sup>1</sup> Heating Temp	Degrees F:	<b>N/A</b>
Unoccupied <sup>1</sup> Heating Time	Hours / Day:	<b>N/A</b>

### Boilers / DHW Generation:

Boiler 1 Old Building	Type:	<b>Gas, Steam</b>	Capacity:	<b>3000 MBH</b>	Efficiency:	<b>≈70%</b>
Boiler 2 Freshman Bldg.	Type:	<b>Gas, Steam</b>	Capacity:	<b>3000 MBH</b>	Efficiency:	<b>≈70%</b>
Domestic Hot Water 1	Type:	<b>Gas-Fired</b>	Capacity:	<b>520 MBH</b>	Efficiency:	<b>≈80%</b>

<sup>1</sup>Unoccupied temps/times based on opportunity for savings based on programmable thermostats

## Water & Sewer

### Domestic Hot Water:

DHW Daily Usage	Gallons/Resident:	<b>Unknown</b>
DHW Delivery Temp	Degrees F:	<b>120</b>

### Domestic Cold Water:

Showerheads	Gallons / Minute:	<b>2.5</b>
Toilets	Gallons / Flush:	<b>2.5-3</b>
Irrigation	Gallons / Year:	<b>None</b>

## Lighting Loads

Hallway/Stairs	Type:	<b>Fluorescent</b>	Wattage:	<b>64</b>	Hours per Day:	<b>12</b>
Classrooms	Type:	<b>Fluorescent</b>	Wattage:	<b>64</b>	Hours per Day:	<b>12</b>
Common Kitchen	Type:	<b>Fluorescent</b>	Wattage:	<b>64</b>	Hours per Day:	<b>12</b>
Exit Lighting	Type:	<b>LED</b>	Wattage:	<b>7</b>	Hours per Day:	<b>24</b>
Support/Office	Type:	<b>Fluorescent</b>	Wattage:	<b>64</b>	Hours per Day:	<b>12</b>
Exterior	Type:	<b>Metal Halide</b>	Wattage:	<b>250-500</b>	Hours per Day:	<b>12</b>

# Simple Payback Analysis

EWCM #1 Upgrade Exterior Lighting

## Replacement Costs

Total costs to convert from HID types to LED types

\$45,250.00

## Utility Cost

Electricity: \$0.178  
Natural Gas: \$0.921

## Existing Types / Usage

Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1: High Intensity Discharge	500	25	12	365	54,750	\$9,745.50
Type 2:					0	\$0.00
Type 3:					0	\$0.00
Type 4:					0	\$0.00
Type 5:					0	\$0.00
Total:					54,750	\$9,745.50

## Proposed Green Types / Usage

Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1: Comparable LED Fixtures	70	25	12	365	7,665	\$1,364.37
Type 2:					0	\$0.00
Type 3:					0	\$0.00
Type 4:					0	\$0.00
Type 5:					0	\$0.00
Total:					7,665	\$1,364.37

## Annual Electric Savings

160,654,020 BTUs  
47,085.00 kWh  
Savings = 47,085.00 x \$0.18 = \$8,381.13/yr

## Annual Natural Gas Savings<sup>1</sup>

0 BTUs  
0.00 therms  
Savings = 0.00 x \$0.92 = \$0.00/yr

## Annual Net Cost Savings

\$8,381.13 + \$0.00 = \$8,381.13

## 5. Simple Payback

\$45,250.00 / \$8,381.13 = 5.40 yrs

## Additional Notes/Comments:

Exterior lighting, no heat gain/loss from fixtures.

# Simple Payback Analysis

**EWCM #2 Upgrade Freshman Building Boilers**

2 boilers provide steam heat to the High School, one was recently replaced. Upgrade the older boiler with high efficiency model. Convert the new boiler to hydronic

Replacement Costs		Type	Cost
A. Proposed Conventional:		Replacement of older boilers	\$220,000.00
B. Proposed Green:		High-efficiency boiler	\$334,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$114,000.00

Boiler Efficiencies		
A. Existing Efficiency:		75%
B. Conventional Efficiency:		75%
C. Green Efficiency:		96%

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	35,041,843.832 btus
		372428.41 therms	372428.41 therms	350418.44 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$322,735.38

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$322,735.38	= \$20,271.19 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$20,271.19	= \$20,271.19 /yr

Simple Payback: Conventional				
	\$220,000.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$334,000.00	/	\$20,271.19	= 16.5 yrs
Incremental Payback: Conventional to Green				
	\$114,000.00	/	\$20,271.19	= 5.6 yrs

# Simple Payback Analysis

## EWCM 2-A Upgrade Old Building Boilers

2 boilers provide steam heat to the High School, one was recently replaced. Upgrade the older boilers with high efficiency models.

Replacement Costs		Type	Cost
A. Proposed Conventional:		Replacement of older boilers	\$570,000.00
B. Proposed Green:		High-efficiency boiler	\$980,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$410,000.00

Boiler Efficiencies		
A. Existing Efficiency:		75%
B. Conventional Efficiency:		75%
C. Green Efficiency:		96%

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	35,459,189.719 btus
		372428.41 therms	372428.41 therms	354591.90 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$326,579.14

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$326,579.14	= \$16,427.43 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$16,427.43	= \$16,427.43 /yr

Simple Payback: Conventional				
	\$570,000.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$980,000.00	/	\$16,427.43	= 59.7 yrs
Incremental Payback: Conventional to Green				
	\$410,000.00	/	\$16,427.43	= 25.0 yrs

# Simple Payback Analysis

**EWCM #3 Upgrade Heating Control System**

Replace the existing Pneumatic control system (including air compressors) with Digital Energy Management System (EMS)

Replacement Costs		Type	Cost
A. Proposed Conventional:		Maintain Existing Pneumatic System	\$520,660.00
B. Proposed Green:		Digital EMS Control System	\$600,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$79,340.00

Annual Utility Cost		Existing	Conventional	Green
		37,242,841.273 btus	37,242,841.273 btus	34,891,556.580 btus
		372428.41 therms	372428.41 therms	348915.57 therms
Utility Cost		\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost		\$343,006.57	\$343,006.57	\$321,351.24

Annual Savings: Existing to Conventional				
Savings =	\$343,006.57	-	\$343,006.57	= \$0.00 /yr

Annual Savings: Conventional to Green				
Savings =	\$343,006.57	-	\$321,351.24	= \$21,655.33 /yr

Annual Savings: Existing to Green				
Savings =	\$0.00	+	\$21,655.33	= \$21,655.33 /yr

Simple Payback: Conventional				
	\$520,660.00	/	\$0.00	= N/A yrs
Simple Payback: Green				
	\$600,000.00	/	\$21,655.33	= 27.7 yrs
Incremental Payback: Conventional to Green				
	\$79,340.00	/	\$21,655.33	= 3.7 yrs

# Simple Payback Analysis

## EWCM #4 Upgrade Circulation Pumps

**Description:** This worksheet calculates the annual savings and simple payback of replacing existing pump motors with comparable premium efficient motors.

**Methodology:** Energy usage for each motor is calculated by converting the motor's horsepower (hp) rating to kilowatts (kW), and multiplying the kW value by the annual hours of use, and dividing this amount by the motor's efficiency:

$$\{ (\text{hp}) \times (0.746 \text{ kW/hp}) \times (\text{hours}) \} \div (\text{Motor efficiency})$$

### Replacement Costs

	Type	Cost
A. Proposed Conventional:	Standard Service Pumps	\$5,710.00
B. Proposed Green:	Premium Service Pumps	\$7,800.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$2,090.00

### Utility Cost

Electricity: \$0.178

### Existing Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Existing Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	4	5	.746	3.7300	5840	100%	83.0%	104,979	\$18,686
Heat P2	4	1	.746	0.7460	5840	100%	81.0%	21,514	\$3,830
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								126,494	\$22,516

### Proposed Green Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Proposed Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	4	5	.746	3.7300	5840	100%	92.5%	94,198	\$16,767
Heat P2	4	1	.746	0.7460	5840	100%	90.0%	19,363	\$3,447
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								113,560	\$20,214

### Annual Savings: Existing to Proposed Green

$$\text{Savings} = \$22,515.85 - \$20,213.76 = \$2,302.09 / \text{yr}$$

### Simple Payback: Existing to Proposed Green

$$\$2,090.00 / \$2,302.09 = 0.9 \text{ yrs}$$

# Simple Payback Analysis

EWCM #5 Upgrade Domestic Hot Water Boilers

Replace existing atmospheric domestic hot water boilers with high efficiency condensing models

## Replacement Costs

	Type	Cost
A. Proposed Conventional:	Conventional atmospheric DHW boilers	\$20,000.00
B. Proposed Green:	High-efficiency DHW boiler	\$31,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$11,000.00

## Boiler Efficiencies

A. Existing Efficiency:	80%
B. Conventional Efficiency:	80%
C. Green Efficiency:	96%

## Annual Utility Cost

	Existing	Conventional	Green
	7,036,689.801 btus	7,036,689.801 btus	4,247,789.448 btus
	70366.90 therms	70366.90 therms	42477.89 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$64,807.91	\$64,807.91	\$39,122.14

## Annual Savings: Existing to Conventional

Savings = \$64,807.91 - \$64,807.91 = \$0.00 /yr

## Annual Savings: Conventional to Green

Savings = \$64,807.91 - \$39,122.14 = \$25,685.77 /yr

## Annual Savings: Existing to Green

Savings = \$0.00 + \$25,685.77 = \$25,685.77 /yr

## Simple Payback: Conventional

\$20,000.00 / \$0.00 = N/A yrs

## Simple Payback: Green

\$31,000.00 / \$25,685.77 = 1.2 yrs

## Incremental Payback: Conventional to Green

\$11,000.00 / \$25,685.77 = 0.4 yrs

# Simple Payback Analysis

EWCM #6 Upgrade Steam Classroom Ventilators

Replace existing steam classroom ventilators with hydronic ventilators that include a heat recovery module.  
Upgrade to water source heat pump ventilators providing heat and air conditioning.

Replacement Costs		Type	Cost
A. Proposed Conventional:		Hydronic Ventilators with Heat Recovery	\$1,250,000.00
B. Proposed Green:		Water Source Heat Pump Ventilators	\$2,250,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:			\$1,000,000.00

HVAC SEER Values		
A. Existing SEER:		N/A
B. Proposed Conventional SEER:		N/A
C. Proposed Green SEER:		18.0

Annual Utility Cost, Heating		Existing	Conventional	Green
		Gas	Gas	Gas
		37,242,841.273 btus	32,563,721,848 btus	22,345,704,764 btus
		372428.41 therms	325637.22 therms	223457.05 therms
Utility Cost		\$0.92 /therm	\$0.92 /therm	\$0.92 /therm
Heating Cost		\$343,006.57	\$299,911.88	\$205,803.94

Annual Utility Cost, Cooling		Existing	Conventional	Green
		Electric	Electric	Electric
		0 btus	0 btus	584,987,400 btus
		0.00 kWhs	0.00 kWhs	171450.00 kWhs
Utility Cost		\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost		\$0.00	\$0.00	\$30,518.10

Annual Savings: Existing to Conventional		
Savings =	\$343,006.57 - \$299,911.88	= \$43,094.69/yr

Annual Savings: Conventional to Green		
Savings =	\$299,911.88 - \$236,322.04	= \$63,589.84/yr

Annual Savings: Existing to Green		
Savings =	\$43,094.69 + \$63,589.84	= \$106,684.53/yr

Simple Payback: Conventional		
	\$1,250,000.00 / \$43,094.69	= 29.0 yrs
Simple Payback: Green		
	\$2,250,000.00 / \$106,684.53	= 21.1 yrs
Incremental Payback: Conventional to Green		
	\$1,000,000.00 / \$63,589.84	= 15.7 yrs



# Simple Payback Analysis

**EWCM #7 Upgrade Split System Air Conditione**

Replace existing split system SEER 13 Air Conditioners with models rated at SEER 18 for higher efficiency and lower utility costs.

## Replacement Costs

	Type	Cost
A. Proposed Conventional:	SEER 13 Rated Models	\$10,500.00
B. Proposed Green:	SEER 18 Rated Models	\$13,500.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$3,000.00

## HVAC SEER Values

A. Existing SEER:	10.0
B. Proposed Conventional SEER:	13.0
C. Proposed Green SEER:	18.0

## Annual Utility Cost, Heating

	Existing	Conventional	Green
	Electric	Electric	Electric
	26,859,264 btus	20,666,484 btus	14,924,088 btus
	7872.00 kWhs	6057.00 kWhs	4374.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Heating Cost	\$1,401.22	\$1,078.15	\$778.57

## Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Gas	Gas	Gas
	0.00 btus	0.00 btus	0.00 btus
	0.00 therms	0.00 therms	0.00 therms
Utility Cost	\$0.18 /therm	\$0.18 /therm	\$0.18 /therm
Cooling Cost	\$0.00	\$0.00	\$0.00

## Annual Savings: Existing to Conventional

Savings = \$1,401.22 - \$1,078.15 = \$323.07/yr

## Annual Savings: Conventional to Green

Savings = \$1,078.15 - \$778.57 = \$299.57/yr

## Annual Savings: Existing to Green

Savings = \$323.07 + \$299.57 = \$622.64/yr

## Simple Payback: Conventional

\$10,500.00 / \$323.07 = 32.5 yrs

## Simple Payback: Green

\$13,500.00 / \$622.64 = 21.7 yrs

## Incremental Payback: Conventional to Green

\$3,000.00 / \$299.57 = 10.0 yrs

# Simple Payback Analysis

**EWCM #8** Gym and Locker Room  
Heat/Ventilation System Upgrade

Replace existing ventilators with models that include heat recovery modules

## Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-kind Hydronic Replacements	\$90,000.00
B. Proposed Green:	Hydronic Replacements with Heat Recovery	\$180,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$90,000.00

## HVAC SEER Values

A. Existing SEER:	N/A
B. Proposed Conventional SEER:	N/A
C. Proposed Green SEER:	N/A

## Annual Utility Cost, Heating

	Existing	Conventional	Green
	Gas	Gas	Gas
	37,242,841,273 btus	37,242,841,273 btus	36,483,134,798 btus
	372428.41 therms	372428.41 therms	364831.35 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$343,006.57	\$343,006.57	\$336,009.67

## Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Electric	Electric	Electric
	0 btus	0 btus	0 btus
	0.00 kWhs	0.00 kWhs	0.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost	\$0.00	\$0.00	\$0.00

## Annual Savings: Existing to Conventional

Savings = \$343,006.57 - \$343,006.57 = \$0.00/yr

## Annual Savings: Conventional to Green

Savings = \$343,006.57 - \$336,009.67 = \$6,996.90/yr

## Annual Savings: Existing to Green

Savings = \$0.00 + \$6,996.90 = \$6,996.90/yr

## Simple Payback: Conventional

\$90,000.00 / \$0.00 = N/A yrs

## Simple Payback: Green

\$180,000.00 / \$6,996.90 = 25.7 yrs

## Incremental Payback: Conventional to Green

\$90,000.00 / \$6,996.90 = 12.9 yrs

# Simple Payback Analysis

EWCM #9 Upgrade Roof Top Ventilators

Upgrade the J. C. Roof top hydronic makeup air units with models that utilize Heat Recovery modules.

## Replacement Costs

	Type	Cost
A. Proposed Conventional:	In-kind Hydronic Replacements	\$150,000.00
B. Proposed Green:	Hydronic Replacements with Heat Recovery	\$200,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$50,000.00

## HVAC SEER Values

A. Existing SEER:	N/A
B. Proposed Conventional SEER:	N/A
C. Proposed Green SEER:	N/A

## Annual Utility Cost, Heating

	Existing	Conventional	Green
	Gas	Gas	Gas
	37,242,841,273 btus	37,242,841,273 btus	36,783,134,798 btus
	372428.41 therms	372428.41 therms	367831.35 therms
Utility Cost	\$0.921 /therm	\$0.921 /therm	\$0.921 /therm
Heating Cost	\$343,006.57	\$343,006.57	\$338,772.67

## Annual Utility Cost, Cooling

	Existing	Conventional	Green
	Electric	Electric	Electric
	0 btus	0 btus	0 btus
	0.00 kWhs	0.00 kWhs	0.00 kWhs
Utility Cost	\$0.178 /kWh	\$0.178 /kWh	\$0.178 /kWh
Cooling Cost	\$0.00	\$0.00	\$0.00

## Annual Savings: Existing to Conventional

Savings = \$343,006.57 - \$343,006.57 = \$0.00/yr

## Annual Savings: Conventional to Green

Savings = \$343,006.57 - \$338,772.67 = \$4,233.90/yr

## Annual Savings: Existing to Green

Savings = \$0.00 + \$4,233.90 = \$4,233.90/yr

## Simple Payback: Conventional

\$150,000.00 / \$0.00 = N/A yrs

## Simple Payback: Green

\$200,000.00 / \$4,233.90 = 47.2 yrs

## Incremental Payback: Conventional to Green

\$50,000.00 / \$4,233.90 = 11.8 yrs

# Simple Payback Analysis

## EWCM #10 Upgrade Roof Exhaust Fan Motors

**Description:** This worksheet calculates the annual savings and simple payback of replacing existing fan motors with comparable premium efficient motors.

**Methodology:** Energy usage for each motor is calculated by converting the motor's horsepower (hp) rating to kilowatts (kW), and multiplying the kW value by the annual hours of use, and dividing this amount by the motor's efficiency:

$$\{ (\text{hp}) \times (0.746 \text{ kW/hp}) \times (\text{hours}) \} \div (\text{Motor efficiency})$$

### Replacement Costs

	Type	Cost
A. Proposed Conventional:	Standard Service Motors	\$39,000.00
B. Proposed Green:	Premium Service Motors	\$58,500.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$19,500.00

### Utility Cost

Electricity: \$0.178

### Existing Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Existing Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	26	3	.746	2.2380	4380	100%	86.0%	296,353	\$52,751
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								296,353	\$52,751

### Proposed Green Conditions

Existing Motor	Quantity	Size: hp	Conversion Factor kW/hp	kW per Motor	Usage hrs/Yr	Load	Proposed Efficiency	Total Usage kWh	Operational Cost \$
Heat P1	26	3	.746	2.2380	4380	100%	91.0%	280,070	\$49,852
Heat P2			.746	0.0000		100%		0	\$0
Heat P3			.746	0.0000		100%		0	\$0
Heat P4			.746	0.0000		100%		0	\$0
DHW P1			.746	0.0000		100%		0	\$0
DHW P2			.746	0.0000		100%		0	\$0
DHW P3			.746	0.0000		100%		0	\$0
Totals:								280,070	\$49,852

### Annual Savings: Existing to Proposed Green

Savings = \$52,750.81 - \$49,852.41 = \$2,898.40 / yr

### Simple Payback: Existing to Proposed Green

\$19,500.00 / \$2,898.40 = 6.7 yrs

# Simple Payback Analysis

**EWCM #11 Upgrade Exterior Doors (Entry/Service)**

Replacement Costs		
	Type	Cost
A. Proposed Conventional	Various Materials Wood, Aluminum, Metal	\$201,200.00
B. Proposed Green	Fiberglass, Insulated	\$277,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green		\$75,800.00

Existing Conditions			
General: Existing doors vary in materials, insulation, and glass lights. Generally the doors are not insulated. A small amount have insulated double-pane glass.			
A. Door Type:			Varies
B. Total Area of Doors:			1,974 sf
C. Utility Cost:	Gas		\$0.92 /therm

U-Factor		
A. Existing:		≈.82
B. Conventional:		0.82
C. Green:		0.38

Annual Savings: Existing to Conventional		
		0 BTUs
		0.00 therms
Savings =	\$0.92 x 0.00	= \$0.00 /yr

Annual Savings: Conventional to Green		
		5,226,000 BTUs
		52.26 therms
Savings =	\$0.92 x 52.26	= \$48.13 /yr

Annual Savings: Existing to Green		
		5,226,000 BTUs
		52.26 therms
Savings =	\$0.00 + \$48.13	= \$48.13 /yr

Simple Payback: Conventional			
\$201,200.00	/	\$0.00	= #DIV/0! yrs
Simple Payback: Green			
\$277,000.00	/	\$48.13	= 5755.1 yrs
Incremental Payback: Conventional to Green			
\$75,800.00	/	\$48.13	= 1574.9 yrs

Additional Notes:	

# Simple Payback Analysis

**EWCM #12 Upgrade Windows**

Replacement Costs	Type	Cost
A. Proposed Conventional:	Steel and Wood Framed DH/Casement types Single Glazed	\$2,550,600.00
B. Proposed Green:	Insulated Fiberglass Framed, Dbl Glazed, low E, Argon	\$2,808,000.00
C. Incremental Cost Between Proposed Conventional and Proposed Green:		\$257,400.00

Existing Conditions	
General: Metal framed and single glazed windows have little or no insulation value.	
A. Window Type:	Metal/Wood
B. Total Area of Windows:	46,332 sf
C. Utility Cost:	Gas \$0.921 /therm

U-Factor <sup>1</sup>	
A. Existing:	1.27
B. Conventional:	1.27
C. Green:	0.38

Annual Savings: Existing to Conventional	
	0 BTUs
	0.00 therms
Savings =	\$0.921 x 0.00 = \$0.00 /yr

Annual Savings: Conventional to Green	
	810,000,000 BTUs
	8100.00 therms
Savings =	\$0.921 x 8100.00 = \$7,460.10 /yr

Annual Savings: Existing to Green	
	810,000,000 BTUs
	8100.00 therms
Savings =	\$0.00 + \$7,460.10 = \$7,460.10 /yr

<b>Simple Payback: Conventional</b>				
\$2,550,600.00	/	\$0.00	=	N/A yrs
<b>Simple Payback: Green</b>				
\$2,808,000.00	/	\$7,460.10	=	376.4 yrs
<b>Incremental Payback: Conventional to Green</b>				
\$257,400.00	/	\$7,460.10	=	34.5 yrs

Additional Notes:
1 The U-factors were derived from the 2001 ASHRAE Fundamentals Handbook, based on the specifications in the plan

# Simple Payback Analysis

**EWCM #13 Upgrade Building Interior Lighting**

## Replacement Costs

A. Total cost to upgrade Fluorescent Fixtures with LED Fixtures: \$1,000,000.00

## Utility Cost

Electricity: \$0.18  
Natural Gas: \$0.92

## Existing Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	Fluorescent Tube Fixture	32	9,127	8	365	852,827	\$151,803.18
Type 2:						0	\$0.00
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						852,827	\$151,803.18

## Proposed Green Types / Usage

	Description	Wattage per Fixture	Number of Fixtures	Lighting Hours/Day	Usage Days/Year	Usage kWh/Year	Usage \$/Year
Type 1:	LED Replacement Fixture	15	9,127	8	365	399,763	\$71,157.74
Type 2:						0	\$0.00
Type 3:						0	\$0.00
Type 4:						0	\$0.00
Type 5:						0	\$0.00
Total:						399,763	\$71,157.74

## Annual Electric Savings

1,545,855.323 BTUs  
453,064.28 kWh

Savings = 453,064.28 x \$0.18 = \$80,645.44/yr

## Annual Natural Gas Savings<sup>1</sup>

-108,000.000 BTUs  
-1,080.00 therms

Savings = -1,080.00 x \$0.92 = -\$994.68/yr

## Annual Net Cost Savings

\$80,645.44 + -\$994.68 = \$79,650.76

## 5. Simple Payback

\$1,000,000.00 / \$79,650.76 = 12.55 yrs

## Additional Notes/Comments:

<sup>1</sup>Negative natural gas savings attributed to decrease in heating gain from the reduced lighting load (wattage); therefore, additional natural gas required for space heating in these areas.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 1

Upgrade Exterior Lighting

High Intensity Discharge (HID) Fixtures

vs.

Long life, Efficient LED Fixtures

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

20

Conventional Product:

High Intensity Discharge (HID) Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	HID Fixtures	25	ea	\$1,800.00	\$45,000	20	1	1.0	\$45,000	\$45,000
Maintain	Bulb/Ballast Repl.	25	ea	\$150.00	\$3,750	4	1	5.0	\$24,085	\$13,299
Utility Cost	Electricity	54,750	kWh	\$0.178	\$9,746	1	1	20.0	\$261,865	\$128,933

Total Life Cycle Cost

\$330,951

\$187,232

### Energy Savings

Net Life Cycle Cost after Energy Savings									\$330,951	\$187,232

Green Product:

Long life, Efficient LED Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	LED Fixtures	25	ea	\$2,050.00	\$51,250	20	1	1.0	\$51,250	\$51,250
Maintain	N/A									
Utility Cost	Electricity	7,665	kWh	\$0.178	\$1,364	1	1	20.0	\$36,661	\$18,051

Total Life Cycle Cost

\$87,911

\$69,301

### Energy Savings

Net Life Cycle Cost after Energy Savings									\$87,911	\$69,301

## ECONOMIC RETURN ANALYSIS

Green NPV	\$117,931
Green IRR	n/a

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Long life, Efficient LED Fixtures

Override with Green Product? No

Final Product Choice

Green Product: Long life, Efficient LED Fixtures

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.



Energy and Water Conservation Measure (EWCM): # 1

Upgrade Exterior Lighting

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Final Product Choice

Green Product:

Long life, Efficient LED Fixtures

### Immediate Replacement

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Fixtures	25	ea	\$2,050.00	\$51,250	20	1	1.0	\$51,250	\$51,250
Maintain	N/A									
Utility Cost	Electricity	7,665	kWh	\$0.18	\$1,364	1	1	20.0	\$36,661	\$18,051
									\$0	\$0
Total Life Cycle Cost									\$87,911	\$69,301
<i>Energy Savings</i>										
Net Life Cycle Cost after Energy Savings									\$87,911	\$69,301

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCN): # 2 Upgrade Heating Boilers Freshman Bldg

Gas-fired Steam Boilers

vs.

Replace older boiler & Convert Newer Boiler to Hydronic

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Gas-fired Steam Boilers

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Older Steam Boiler	1	ea	\$190,000.00	\$190,000	40	1	1.0	\$190,000	\$190,000
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000
Utility Cost	Natural Gas	372,428	Therms	\$0.921	\$343,007	1	1	40.0	\$25,863,127	\$6,296,455
Maintain	Distribution System	1	ls	\$375,000.00	\$375,000	20	1	2.0	\$1,052,292	\$520,312
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$27,135,419	\$7,036,767

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$27,135,419	\$7,036,767

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	1	1.0	\$304,000	\$304,000
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000
Utility Cost	Natural Gas	350,418	Therms	\$0.921	\$322,735	1	1	40.0	\$24,334,624	\$5,924,336
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$25,168,624	\$6,758,336

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$25,168,624	\$6,758,336

## ECONOMIC RETURN ANALYSIS

Green NPV	\$278,430
Green IRR	14.7%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Override with Green Product? No

### Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Energy and Water Conservation Measure (EWCM): # 2

Upgrade Heating Boilers Freshman Bldg

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	1	1.0	\$304,000	\$304,000
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	1	1.0	\$30,000	\$30,000
Utility Cost	Natural Gas	350,418	Therms	\$0.92	\$322,735	1	1	40.0	\$24,334,624	\$5,924,336
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$25,168,624	\$6,758,336

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$25,168,624	\$6,758,336

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	High Efficiency Boilers	1	ea	\$304,000.00	\$304,000	40	0	1.0	\$24,069	\$1,197
Install/Replace	Convert to Hydronic	1	ea	\$30,000.00	\$30,000	40	0	1.0	\$2,375	\$118
Utility Cost	Natural Gas	350,418	Therms	\$0.92	\$322,735	1	0	41.0	\$24,334,624	\$5,924,336
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	0	1.0	\$39,588	\$1,968
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$24,400,656	\$5,927,619

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$24,400,656	\$5,927,619

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year: 1

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCN): 2-A Upgrade Heating Boilers

Gas-fired Steam Boilers

vs.

Replace older boiler & Convert Newer Boiler to Hydronic

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Gas-fired Steam Boilers

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Older Steam Boiler	2	ea	\$190,000.00	\$380,000	40	1	1.0	\$380,000	\$380,000
					\$0			0.0	\$0	\$0
Utility Cost	Natural Gas	372,428	Therms	\$0.921	\$343,007	1	1	40.0	\$25,863,127	\$6,296,455
Maintain	Distribution System	1	ls	\$375,000.00	\$375,000	20	1	2.0	\$1,052,292	\$520,312
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$27,295,419	\$7,196,767

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$27,295,419	\$7,196,767

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	1	1.0	\$608,000	\$608,000
					\$0			0.0	\$0	\$0
Utility Cost	Natural Gas	354,592	Therms	\$0.921	\$326,579	1	1	40.0	\$24,624,479	\$5,994,902
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	1	1.6	\$124,234	\$84,507
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$25,856,712	\$7,187,409

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$25,856,712	\$7,187,409

## ECONOMIC RETURN ANALYSIS

Green NPV	\$9,357
Green IRR	8.2%

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

Override with Green Product? No

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): 2-A

Upgrade Heating Boilers

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product: Replace older boiler & Convert Newer Boiler to Hydronic

### Immediate Replacement

				Year	1						Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	1	1.0	\$608,000	\$608,000		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Utility Cost	Natural Gas	354,592	Therms	\$0.92	\$326,579	1	1	40.0	\$24,624,479	\$5,994,902		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	1	1.0	\$500,000	\$500,000		
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	1	1.6	\$124,234	\$84,507		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Total Life Cycle Cost										\$25,856,712	\$7,187,409	

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$25,856,712	\$7,187,409	

### Replacement at End of Remaining Useful Life

				Year	0							
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	High Efficiency Boilers	2	ea	\$304,000.00	\$608,000	40	0	1.0	\$48,139	\$2,393		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Utility Cost	Natural Gas	354,592	Therms	\$0.92	\$326,579	1	0	41.0	\$24,624,479	\$5,994,902		
Install/Replace	Hydronic Distribution	1	ls	\$500,000.00	\$500,000	40	0	1.0	\$39,588	\$1,968		
Install/Replace	Hydronic Circ Pumps	8	ea	\$8,500.00	\$68,000	25	0	1.6	\$60,701	\$17,945		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0		
					\$0			0.0	\$0	\$0		
Total Life Cycle Cost										\$24,772,906	\$6,017,208	

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Net Life Cycle Cost after Energy Savings										\$24,772,906	\$6,017,208	

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year: 1

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 3 Upgrade Heating Controls

Maintain Existing Pneumatic Heating Control System

vs.

Install Digital Energy Management System (EMS)

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Maintain Existing Pneumatic Heating Control System

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Maintain	Periodic Maintenance	7	cycles	\$71,500.00	\$500,500	20	1	1.0	\$500,500	\$500,500
Install/Replace	Air Compressors	1	ls	\$20,160.00	\$20,160	20	1	1.0	\$20,160	\$20,160
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$520,660	\$520,660

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$520,660	\$520,660

Green Product:

Install Digital Energy Management System (EMS)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	1	1.3	\$902,826	\$793,172
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$902,826	\$793,172

### Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.921	(\$21,655)	1	1	20.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									\$320,960	\$506,681

## ECONOMIC RETURN ANALYSIS

Green NPV	\$13,979
Green IRR	10.3%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Digital Energy Management System (EMS)

Override with Green Product? No

Final Product Choice

Green Product: Install Digital Energy Management System (EMS)

Energy and Water Conservation Measure (EWCM): # 3

Upgrade Heating Controls

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Install Digital Energy Management System (EMS)

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	1	1.3	\$902,826	\$793,172
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$902,826	\$793,172

### Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.92	(\$21,655)	1	1	20.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									\$320,960	\$506,681

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	EMS Digital Controls	1	ea	\$650,000.00	\$650,000	15	0	1.4	\$299,316	\$176,275
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$299,316	\$176,275

### Energy Savings

Utility Cost	Natural Gas	23,512	Therms	\$0.92	(\$21,655)	1	0	21.0	(\$581,866)	(\$286,491)
Net Life Cycle Cost after Energy Savings									(\$282,550)	(\$110,215)

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 4 Upgrade Existing Heating Circulation Pumps

Standard Service Pumps

vs.

Premium Service Pumps

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

### Conventional Product: Standard Service Pumps

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
<b>Life Cycle Costs</b>										
Install/Replace	Standard Duty 5-HP	4	ea	\$3,360.00	\$13,440	20	1	1.0	\$13,440	\$13,440
Install/Replace	Standard Duty 1-HP	4	ea	\$2,350.00	\$9,400	20	1	1.0	\$9,400	\$9,400
Utility Cost	Electricity	126,494	kWh	\$0.178	\$22,516	1	1	20.0	\$605,012	\$297,887
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
<b>Total Life Cycle Cost</b>									<b>\$627,852</b>	<b>\$320,727</b>

### Energy Savings

					\$0			0.0	\$0	\$0
<b>Net Life Cycle Cost after Energy Savings</b>									<b>\$627,852</b>	<b>\$320,727</b>

### Green Product: Premium Service Pumps

									Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
<b>Life Cycle Costs</b>										
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	1	1.0	\$18,000	\$18,000
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	1	1.0	\$13,200	\$13,200
Utility Cost	Electricity	113,560	kWh	\$0.178	\$20,214	1	1	20.0	\$543,149	\$267,428
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
<b>Total Life Cycle Cost</b>									<b>\$574,349</b>	<b>\$298,628</b>

### Energy Savings

					\$0			0.0	\$0	\$0
<b>Net Life Cycle Cost after Energy Savings</b>									<b>\$574,349</b>	<b>\$298,628</b>

## ECONOMIC RETURN ANALYSIS

Green NPV	\$22,099
Green IRR	42.1%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: Premium Service Pumps

Override with Green Product? No

### Final Product Choice

Green Product: Premium Service Pumps



Energy and Water Conservation Measure (EWCM): # 4

Upgrade Existing Heating Circulation Pumps

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product  
Replacement Year

0  
0

Final Product Choice

Green Product: Premium Service Pumps

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	1	1.0	\$18,000	\$18,000
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	1	1.0	\$13,200	\$13,200
Utility Cost	Electricity	113,560	kWh	\$0.18	\$20,214	1	1	20.0	\$543,149	\$267,428
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$574,349	\$298,628

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$574,349	\$298,628

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Duty 5-HP	4	ea	\$4,500.00	\$18,000	20	0	1.1	\$1,578	\$366
Install/Replace	Premium Duty 1-HP	4	ea	\$3,300.00	\$13,200	20	0	1.1	\$1,157	\$268
Utility Cost	Electricity	113,560	kWh	\$0.18	\$20,214	1	0	21.0	\$543,149	\$267,428
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$545,885	\$268,062

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$545,885	\$268,062

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

- Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
- Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 5

Upgrade Domestic Hot Water Boilers

Conventional Atmospheric DHW Boilers

vs.

High-Efficiency Condensing DHW Boilers

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Conventional Atmospheric DHW Boilers

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Atmospheric Boilers	1	ea	\$10,000.00	\$10,000	20	1	1.0	\$10,000	\$10,000
Install/Replace	Atmospheric Boilers	1	ea	\$10,000.00	\$10,000	20	1	1.0	\$10,000	\$10,000
Utility Cost	Natural Gas	70,367	Therms	\$0.921	\$64,808	1	1	20.0	\$1,741,413	\$857,412
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,761,413	\$877,412

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,761,413	\$877,412

Green Product:

High-Efficiency Condensing DHW Boilers

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Utility Cost	Natural Gas	42,478	Therms	\$0.921	\$39,122	1	1	20.0	\$1,051,226	\$517,588
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,082,226	\$548,588

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,082,226	\$548,588

## ECONOMIC RETURN ANALYSIS

Green NPV	\$328,824
Green IRR	n/a

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: High-Efficiency Condensing DHW Boilers

Override with Green Product? No

### Final Product Choice

Green Product: High-Efficiency Condensing DHW Boilers

Energy and Water Conservation Measure (EWCM): # 5

Upgrade Domestic Hot Water Boilers

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product  
Replacement Year

11
12

Final Product Choice

Green Product: High-Efficiency Condensing DHW Boilers

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	1	1.0	\$15,500	\$15,500
Utility Cost	Natural Gas	42,478	Therms	\$0.92	\$39,122	1	1	20.0	\$1,051,226	\$517,588
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$1,082,226	\$548,588

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,082,226	\$548,588

### Replacement at End of Remaining Useful Life

Year

12

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	12	0.5	\$6,507	\$5,738
Install/Replace	Condensing Boilers	1	ea	\$15,500.00	\$15,500	20	12	0.5	\$6,507	\$5,738
Utility Cost	Natural Gas	42,478	Therms	\$0.92	\$39,122	1	12	9.0	\$550,158	\$174,227
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$563,172	\$185,703

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$563,172	\$185,703

## ECONOMIC RETURN ANALYSIS

Timing NPV	(\$362,884)
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	12
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 6 Upgrade Class Room Ventilators

Install Hydronic Ventilators with Heat Recovery

vs.

Install Water Source Heat Pumps With Heat Recovery

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
<b>Life Cycle Costs</b>										
Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	1	1.0	\$1,250,000	\$1,250,000
Utility Cost	Natural Gas	325,637	Therms	\$0.921	\$299,912	1	1	20.0	\$8,058,745	\$3,967,848
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
<b>Total Life Cycle Cost</b>									<b>\$9,308,745</b>	<b>\$5,217,848</b>

Energy Savings

					\$0			0.0	\$0	\$0
<b>Net Life Cycle Cost after Energy Savings</b>									<b>\$9,308,745</b>	<b>\$5,217,848</b>

Green Product: Install Water Source Heat Pumps With Heat Recovery

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
<b>Life Cycle Costs</b>										
Install/Replace	Heat Pump Ventilators with Heat Recovery	1	Is	\$2,250,000.00	\$2,250,000	20	1	1.0	\$2,250,000	\$2,250,000
Utility Cost	Natural Gas	223,457	Therms	\$0.921	\$205,804	1	1	20.0	\$5,530,029	\$2,722,795
Utility Cost	Electricity	171,450	kWh	\$0.178	\$30,518	1	1	20.0	\$820,033	\$403,756
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
<b>Total Life Cycle Cost</b>									<b>\$8,600,062</b>	<b>\$5,376,551</b>

Energy Savings

					\$0			0.0	\$0	\$0
<b>Net Life Cycle Cost after Energy Savings</b>									<b>\$8,600,062</b>	<b>\$5,376,551</b>

## ECONOMIC RETURN ANALYSIS

Green NPV (\$158,704)  
Green IRR 5.8%

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Override with Green Product? No

Final Product Choice

Conventional Product: Install Hydronic Ventilators with Heat Recovery

Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 6

Upgrade Class Room Ventilators

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Conventional Product:

Install Hydronic Ventilators with Heat Recovery

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	1	1.0	\$1,250,000	\$1,250,000
Utility Cost	Natural Gas	325,637	Therms	\$0.92	\$299,912	1	1	20.0	\$8,058,745	\$3,967,848
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$9,308,745	\$5,217,848

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$9,308,745	\$5,217,848

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Heat Recovery Ventilators	1	Is	\$1,250,000.00	\$1,250,000	20	0	1.1	\$109,594	\$25,394
Utility Cost	Natural Gas	325,637	Therms	\$0.92	\$299,912	1	0	21.0	\$8,058,745	\$3,967,848
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$8,168,339	\$3,993,242

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$8,168,339	\$3,993,242

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:

1

**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 7 Upgrade Split System Air Conditioners

Install SEER 13 Rated Models

vs.

Install SEER 18 Rated Models

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Install SEER 13 Rated Models

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	SEER 13 Models	3	ea	\$3,500.00	\$10,500	20	1	1.0	\$10,500	\$10,500
Utility Cost	Electricity	6,057	kWh	\$0.178	\$1,078	1	1	20.0	\$28,970	\$14,264
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$39,470	\$24,764

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$39,470	\$24,764

Green Product: Install SEER 18 Rated Models

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	1	1.0	\$13,500	\$13,500
Utility Cost	Electricity	4,374	kWh	\$0.178	\$779	1	1	20.0	\$20,921	\$10,301
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$34,421	\$23,801

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$34,421	\$23,801

## ECONOMIC RETURN ANALYSIS

Green NPV	\$963
Green IRR	12.2%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: Install SEER 18 Rated Models

Override with Green Product? No

### Final Product Choice

Green Product: Install SEER 18 Rated Models

Energy and Water Conservation Measure (EWCM): # 7

Upgrade Split System Air Conditioners

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product  
Replacement Year

0

Final Product Choice

Green Product:

Install SEER 18 Rated Models

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	1	1.0	\$13,500	\$13,500
Utility Cost	Electricity	4,374	kWh	\$0.18	\$779	1	1	20.0	\$20,921	\$10,301
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$34,421	\$23,801

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$34,421	\$23,801

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	SEER 18 Models	3	ea	\$4,500.00	\$13,500	20	0	1.1	\$1,184	\$274
Utility Cost	Electricity	4,374	kWh	\$0.18	\$779	1	0	21.0	\$20,921	\$10,301
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$22,104	\$10,575

### Energy Savings

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$22,104	\$10,575

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 8

Upgrade Gym and Locker Room Ventilators

Install Hydronic Ventilators

vs.

Install Hydronic Ventilators with Heat Recovery Modules

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 50

Conventional Product: Install Hydronic Ventilators

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Hydronic Ventilators	6	ea	\$15,000.00	\$90,000	50	1	1.0	\$90,000	\$90,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$90,000	\$90,000

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$90,000	\$90,000

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Hydronic Ventilators w/Heat Recovery	6	ea	\$30,000.00	\$180,000	50	1	1.0	\$180,000	\$180,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$180,000	\$180,000

### Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.921	(\$6,997)	1	1	50.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$609,228)	\$42,994

## ECONOMIC RETURN ANALYSIS

Green NPV	\$47,006
Green IRR	11.5%

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

Override with Green Product? No

Final Product Choice

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.



Energy and Water Conservation Measure (EWCM): # 8

Upgrade Gym and Locker Room Ventilators

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product  
Replacement Year

0

Final Product Choice

Green Product: Install Hydronic Ventilators with Heat Recovery Modules

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hydronic Ventilators w/Heat Recovery	6	ea	\$30,000.00	\$180,000	50	1	1.0	\$180,000	\$180,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$180,000	\$180,000

### Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.92	(\$6,997)	1	1	50.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$609,228)	\$42,994

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hydronic Ventilators w/Heat Recovery	6	ea	\$30,000.00	\$180,000	50	0	1.0	\$15,322	\$353
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$15,322	\$353

### Energy Savings

Utility Cost	Natural Gas	7,597	Therms	\$0.92	(\$6,997)	1	0	51.0	(\$789,228)	(\$137,006)
Net Life Cycle Cost after Energy Savings									(\$773,905)	(\$136,654)

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 9

Upgrade Rooftop Makeup Air Units

Replace In-kind

vs.

Install Ventilators with Heat Recovery Modules

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Replace In-kind

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	In-kind Replacement	5	ea	\$30,000.00	\$150,000	20	1	1.0	\$150,000	\$150,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$150,000	\$150,000

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$150,000	\$150,000

Green Product:

Install Ventilators with Heat Recovery Modules

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	1	1.0	\$200,000	\$200,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$200,000	\$200,000

### Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.921	(\$4,234)	1	1	20.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									\$86,235	\$143,986

## ECONOMIC RETURN ANALYSIS

Green NPV	\$6,014
Green IRR	9.6%

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: Install Ventilators with Heat Recovery Modules

Override with Green Product? No

### Final Product Choice

Green Product: Install Ventilators with Heat Recovery Modules

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Energy and Water Conservation Measure (EWCM): # 9

Upgrade Rooftop Makeup Air Units

## STEP TWO: REPLACEMENT TIMING

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Install Ventilators with Heat Recovery Modules

### Immediate Replacement

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	1	1.0	\$200,000	\$200,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$200,000	\$200,000

### Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.92	(\$4,234)	1	1	20.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									\$86,235	\$143,986

### Replacement at End of Remaining Useful Life

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Ventilators w/Heat Recovery	5	ea	\$40,000.00	\$200,000	20	0	1.1	\$17,535	\$4,063
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

### Expenses for Current Product Through Useful Life

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$17,535	\$4,063

### Energy Savings

Utility Cost	Natural Gas	4,597	Therms	\$0.92	(\$4,234)	1	0	21.0	(\$113,765)	(\$56,014)
Net Life Cycle Cost after Energy Savings									(\$96,230)	(\$51,951)

## ECONOMIC RETURN ANALYSIS

Timing NPV	n/a
Timing IRR	n/a

## TIMING RECOMMENDATION

Replacement Year:	1
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### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 10 Upgrade Roof Exhaust Fan Motors

Standard Service Motors

vs.

Premium Service Motors

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product: Standard Service Motors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Standard Service	26	ea	\$1,500.00	\$39,000	20	1	1.0	\$39,000	\$39,000
Utility Cost	Electricity	296,353	kWh	\$0.178	\$52,751	1	1	20.0	\$1,417,435	\$697,896
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,456,435	\$736,896

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,456,435	\$736,896

Green Product: Premium Service Motors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	1	1.0	\$58,500	\$58,500
Utility Cost	Electricity	280,070	kWh	\$0.178	\$49,852	1	1	20.0	\$1,339,554	\$659,550
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,398,054	\$718,050

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,398,054	\$718,050

## ECONOMIC RETURN ANALYSIS

Green NPV	\$18,846
Green IRR	20.0%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

### Recommendation based on Economic Return Analysis

Green Product: Premium Service Motors

Override with Green Product? No

### Final Product Choice

Green Product: Premium Service Motors

Energy and Water Conservation Measure (EWCM): # 10 Upgrade Roof Exhaust Fan Motors

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product  
Replacement Year

0

Final Product Choice

Green Product: Premium Service Motors

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	1	1.0	\$58,500	\$58,500
Utility Cost	Electricity	280,070	kWh	\$0.18	\$49,852	1	1	20.0	\$1,339,554	\$659,550
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$1,398,054	\$718,050

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,398,054	\$718,050

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Premium Service	26	ea	\$2,250.00	\$58,500	20	0	1.1	\$5,129	\$1,188
Utility Cost	Electricity	280,070	kWh	\$0.18	\$49,852	1	0	21.0	\$1,339,554	\$659,550
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,344,683	\$660,739

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,344,683	\$660,739

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 11 Upgrade Exterior Doors

Various Material (Wood, Aluminum, Steel) Doors

vs.

Install Insulated Fiberglass Doors

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 45

Conventional Product:

Various Material (Wood, Aluminum, Steel) Doors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	1	1.3	\$202,537	\$187,270
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	1	1.3	\$37,172	\$34,369
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$239,709	\$221,639

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$239,709	\$221,639

Green Product:

Install Insulated Fiberglass Doors

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Insul Fiberglass	68	ea	\$3,500.00	\$238,000	45	1	1.0	\$238,000	\$238,000
Install/Replace	Insul Fiberglass	26	ea	\$1,500.00	\$39,000	45	1	1.0	\$39,000	\$39,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$277,000	\$277,000

### Energy Savings

Utility Cost	Natural Gas	52	Therms	\$0.921	(\$48)	1	1	45.0	(\$4,463)	(\$916)
Net Life Cycle Cost after Energy Savings									\$272,537	\$276,084

## ECONOMIC RETURN ANALYSIS

Green NPV	(\$54,445)
Green IRR	n/a

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Various Material (Wood, Aluminum, Steel) Doors

Override with Green Product? No

Final Product Choice

Conventional Product: Various Material (Wood, Aluminum, Steel) Doors

Energy and Water Conservation Measure (EWCM): # 11

Upgrade Exterior Doors

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

Replacement Year

0

Final Product Choice

Conventional Product:

Various Material (Wood, Aluminum, Steel) Doors

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	1	1.3	\$202,537	\$187,270
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	1	1.3	\$37,172	\$34,369
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									<b>\$239,709</b>	<b>\$221,639</b>

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									<b>\$239,709</b>	<b>\$221,639</b>

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Various Materials	68	ea	\$2,500.00	\$170,000	35	0	1.3	\$36,437	\$19,443
Install/Replace	Steel Service Doors	26	ea	\$1,200.00	\$31,200	35	0	1.3	\$6,687	\$3,568
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									<b>\$43,125</b>	<b>\$23,012</b>

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									<b>\$43,125</b>	<b>\$23,012</b>

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 12 Upgrade Windows

Metal & Wood Framed, Single Glazed

vs.

Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 40

Conventional Product: Metal & Wood Framed, Single Glazed

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
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### Life Cycle Costs

Install/Replace	Existing Windows	936	ea	\$2,725.00	\$2,550,600	35	1	1.1	\$2,803,793	\$2,691,808
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,803,793	\$2,691,808

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,803,793	\$2,691,808

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Insulated Fiberglass, Dbl Glazed, low-E, Argon	936	ea	\$3,000.00	\$2,808,000	40	1	1.0	\$2,808,000	\$2,808,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,808,000	\$2,808,000

### Energy Savings

Utility Cost	Natural Gas	8,100	Therms	\$0.921	(\$7,460)	1	1	40.0	(\$562,501)	(\$136,943)
Net Life Cycle Cost after Energy Savings									\$2,245,499	\$2,671,057

## ECONOMIC RETURN ANALYSIS

Green NPV	\$20,750
Green IRR	8.4%

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Override with Green Product? No

Final Product Choice

Green Product: Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.



Energy and Water Conservation Measure (EWCM): # 12 Upgrade Windows

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product	0
Replacement Year	0

Final Product Choice	
Green Product:	Insulated Fiberglass Framed, Dbl. Glazed, low-E, Argon Filled

Immediate Replacement				Year	1						Cost over Life Cycle (EUL)	
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	d Fiberglass, Dbl Glazed, low-	936	ea	\$3,000.00	\$2,808,000	40	1	1.0	\$2,808,000	\$2,808,000		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
Total Life Cycle Cost										\$2,808,000	\$2,808,000	
<b>Energy Savings</b>												
Utility Cost	Natural Gas	8,100	Therms	\$0.92	(\$7,460)	1	1	40.0	(\$562,501)	(\$136,943)		
Net Life Cycle Cost after Energy Savings										\$2,245,499	\$2,671,057	

Replacement at End of Remaining Useful Life				Year	0							
Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted		
Install/Replace	d Fiberglass, Dbl Glazed, low-	936	ea	\$3,000.00	\$2,808,000	40	0	1.0	\$222,325	\$11,053		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0		

<b>Expenses for Current Product Through Useful Life</b>												
					\$0			0.0	\$0	\$0		
					\$0			0.0	\$0	\$0		
Total Life Cycle Cost										\$222,325	\$11,053	
<b>Energy Savings</b>												
Utility Cost	Natural Gas	8,100	Therms	\$0.92	(\$7,460)	1	0	41.0	(\$562,501)	(\$136,943)		
Net Life Cycle Cost after Energy Savings										(\$340,176)	(\$125,890)	

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Energy and Water Conservation Measure (EWCM): # 13 Upgrade Building Interior Lighting

Existing Fluorescent Tube Fixtures

vs.

LED Tube Fixtures

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 20

Conventional Product:

Existing Fluorescent Tube Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Flourescent Tube	9,127	ea	\$82.17	\$750,000	20	1	1.0	\$750,000	\$750,000
Maintain	Bulb/Balast Repl.	9,127	ea	\$3.00	\$27,381	3	1	6.7	\$238,029	\$126,515
Utility Cost	Electricity	852,827	kWh	\$0.178	\$151,803	1	1	20.0	\$4,079,009	\$2,008,363
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$5,067,038	\$2,884,878

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$5,067,038	\$2,884,878

Green Product:

LED Tube Fixtures

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	1	1.0	\$1,000,000	\$1,000,000
Utility Cost	Electricity	399,763	kWh	\$0.178	\$71,158	1	1	20.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.921	\$995	1		21.0	\$26,727	\$13,160
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,938,764	\$1,954,581

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,938,764	\$1,954,581

## ECONOMIC RETURN ANALYSIS

Green NPV	\$930,297
Green IRR	64.2%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: LED Tube Fixtures

Override with Green Product? No

Final Product Choice

Green Product: LED Tube Fixtures

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

LED Tube Fixtures

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	1	1.0	\$1,000,000	\$1,000,000
Utility Cost	Electricity	399,763	kWh	\$0.18	\$71,158	1	1	20.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.92	\$995	1	0	21.0	\$26,727	\$13,160
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$2,938,764	\$1,954,581

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,938,764	\$1,954,581

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	LED Lighting	9,127	ea	\$109.57	\$1,000,000	20	0	1.1	\$87,675	\$20,315
Utility Cost	Electricity	399,763	kWh	\$0.18	\$71,158	1	0	21.0	\$1,912,037	\$941,421
Utility Cost	Natural Gas	1,080	Therms	\$0.92	\$995	1	(1)	22.0	\$26,727	\$13,160
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$2,026,440	\$974,896

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$2,026,440	\$974,896

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Green Measure (GM):

# 1

Domestic Hot Water Storage

Glass Lined Tanks

vs.

Install Long-Life Stainless Steel Tanks

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Glass Lined Tanks

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Glass-Lined	2	ea	\$2,000.00	\$4,000	10	1	2.5	\$12,535	\$7,399
Install/Replace	Large Tank	1	ea	\$12,466.00	\$12,466	20	1	1.3	\$15,975	\$14,299
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$28,510	\$21,698

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$28,510	\$21,698

Green Product:

Install Long-Life Stainless Steel Tanks

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	1	1.0	\$5,000	\$5,000
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	1	1.0	\$15,000	\$15,000
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$20,000	\$20,000

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$20,000	\$20,000

## ECONOMIC RETURN ANALYSIS

Green NPV	\$1,698
Green IRR	11.4%

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Install Long-Life Stainless Steel Tanks

Override with Green Product? No

Final Product Choice

Green Product: Install Long-Life Stainless Steel Tanks

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

Green Measure (GM):

# 1

Domestic Hot Water Storage

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

Replacement Year

0

Final Product Choice

Green Product:

Install Long-Life Stainless Steel Tanks

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	1	1.0	\$5,000	\$5,000
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	1	1.0	\$15,000	\$15,000
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$20,000	\$20,000

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$20,000	\$20,000

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Stainless Steel	2	ea	\$2,500.00	\$5,000	25	0	1.0	\$407	\$64
Install/Replace	Stainless Steel	6	ea	\$2,500.00	\$15,000	25	0	1.0	\$1,220	\$192
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$1,626	\$256

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$1,626	\$256

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Green Measure (GM):

# 2

Upgrade Resilient Flooring

Vinyl Composited Tile (VCT)

vs.

Natural Linoleum

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term

25

Conventional Product:

Vinyl Composited Tile (VCT)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Hallway	29,557	sf	\$5.00	\$147,785	15	1	1.7	\$277,890	\$204,576
Install/Replace	Class Rm	42,302	sf	\$5.00	\$211,510	15	1	1.7	\$397,717	\$292,789
Install/Replace	Cafeteria	8,200	sf	\$5.00	\$41,000	15	1	1.7	\$77,095	\$56,755
Install/Replace	Sch Office/Support	15,776	sf	\$5.00	\$78,880	15	1	1.7	\$148,324	\$109,192
Install/Replace	School Dept	359	sf	\$5.00	\$1,795	15	1	1.7	\$3,375	\$2,485
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$904,401	\$665,797

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$904,401	\$665,797

Green Product:

Natural Linoleum

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	1	1.0	\$192,121	\$192,121
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	1	1.0	\$274,963	\$274,963
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	1	1.0	\$53,300	\$53,300
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	1	1.0	\$102,544	\$102,544
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	1	1.0	\$2,334	\$2,334
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$625,261	\$625,261

### Energy Savings

					\$0			0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$625,261	\$625,261

## ECONOMIC RETURN ANALYSIS

Green NPV	\$40,536
Green IRR	10.1%

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Green Product: Natural Linoleum

Override with Green Product? No

Final Product Choice

Green Product: Natural Linoleum

Green Measure (GM):

# 2

Upgrade Resilient Flooring

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

0

Replacement Year

0

Final Product Choice

Green Product:

Natural Linoleum

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	1	1.0	\$192,121	\$192,121
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	1	1.0	\$274,963	\$274,963
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	1	1.0	\$53,300	\$53,300
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	1	1.0	\$102,544	\$102,544
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	1	1.0	\$2,334	\$2,334
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									\$625,261	\$625,261

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$625,261	\$625,261

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Hallways	29,557	sf	\$6.50	\$192,121	25	0	1.0	\$15,622	\$2,464
Install/Replace	Class Rms	42,302	sf	\$6.50	\$274,963	25	0	1.0	\$22,358	\$3,526
Install/Replace	Cafeteria	8,200	sf	\$6.50	\$53,300	25	0	1.0	\$4,334	\$683
Install/Replace	Sch Office/Support	15,776	sf	\$6.50	\$102,544	25	0	1.0	\$8,338	\$1,315
Install/Replace	School Dept	359	sf	\$6.50	\$2,334	25	0	1.0	\$190	\$30
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									\$50,841	\$8,018

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									\$50,841	\$8,018

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
-------------------	---

**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.

# Life Cycle Cost Analysis

Green Measure (GM): # 3 Upgrade Carpet

Standard Olefin (Petroleum Based)

vs.

Carpet and Rug Institute (CRI) Green Label Plus

(Conventional Product)

(Green Product)

## STEP ONE: PRODUCT COMPARISON

Calculated Life Cycle Term 10

Conventional Product: Standard Olefin (Petroleum Based)

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	1	1.0	\$25,956	\$25,956
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	1	1.0	\$9,364	\$9,364
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	1	1.0	\$63,104	\$63,104
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0

Total Life Cycle Cost \$98,424 \$98,424

### Energy Savings

					\$0			0.0	\$0	\$0
--	--	--	--	--	-----	--	--	-----	-----	-----

Net Life Cycle Cost after Energy Savings \$98,424 \$98,424

Green Product: Carpet and Rug Institute (CRI) Green Label Plus

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
--------	-------------	----------	------	-----------	------------	-----	------------	--------	----------	------------

### Life Cycle Costs

Install/Replace	Media Center	6,489	sf	\$5.00	\$32,445	10	1	1.0	\$32,445	\$32,445
Install/Replace	Auditorium	2,341	sf	\$5.00	\$11,705	10	1	1.0	\$11,705	\$11,705
Install/Replace	School Department	15,776	sf	\$5.00	\$78,880	10	1	1.0	\$78,880	\$78,880
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0

Total Life Cycle Cost \$123,030 \$123,030

### Energy Savings

					\$0			0.0	\$0	\$0
--	--	--	--	--	-----	--	--	-----	-----	-----

Net Life Cycle Cost after Energy Savings \$123,030 \$123,030

## ECONOMIC RETURN ANALYSIS

Green NPV (\$24,606)

Green IRR n/a

## PRODUCT RECOMMENDATION

Recommendation based on Economic Return Analysis

Conventional Product: Standard Olefin (Petroleum Based)

Override with Green Product? No

Final Product Choice

Conventional Product: Standard Olefin (Petroleum Based)

### Notes:

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Green NPV and Green IRR are relative measures comparing Green vs. Conventional implementation.



Green Measure (GM):

# 3

Upgrade Carpet

**STEP TWO: REPLACEMENT TIMING**

Remaining Useful Life of Existing Product

Replacement Year

0

Final Product Choice

Conventional Product:

Standard Olefin (Petroleum Based)

**Immediate Replacement**

Year

1

Cost over Life Cycle (EUL)

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	1	1.0	\$25,956	\$25,956
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	1	1.0	\$9,364	\$9,364
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	1	1.0	\$63,104	\$63,104
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Total Life Cycle Cost									<b>\$98,424</b>	<b>\$98,424</b>

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									<b>\$98,424</b>	<b>\$98,424</b>

**Replacement at End of Remaining Useful Life**

Year

0

Action	Description	Quantity	Unit	Unit Cost	Total Cost	EUL	First Year	Cycles	Inflated	Discounted
Install/Replace	Media Center	6,489	sf	\$4.00	\$25,956	10	0	1.1	\$3,387	\$1,694
Install/Replace	Auditorium	2,341	sf	\$4.00	\$9,364	10	0	1.1	\$1,222	\$611
Install/Replace	School Department	15,776	sf	\$4.00	\$63,104	10	0	1.1	\$8,234	\$4,119
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0

**Expenses for Current Product Through Useful Life**

					\$0			0.0	\$0	\$0
					\$0			0.0	\$0	\$0
Total Life Cycle Cost									<b>\$12,842</b>	<b>\$6,424</b>

**Energy Savings**

0	0	0	0	\$0.00	\$0	0	0	0.0	\$0	\$0
Net Life Cycle Cost after Energy Savings									<b>\$12,842</b>	<b>\$6,424</b>

**ECONOMIC RETURN ANALYSIS**

Timing NPV	n/a
Timing IRR	n/a

**TIMING RECOMMENDATION**

Replacement Year:	1
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**Notes:**

1. Analysis performed using a discount rate of 8.00% and an inflation rate of 3.00% for both expenses and energy costs.
2. Timing NPV and Timing IRR are relative measures comparing Immediate Replacement vs. Replacement at End of Remaining Useful Life.


## **Statement of Delivery**

ON-SITE INSIGHT, Inc. (and/or its representatives) hereby certifies that, this Green Capital Needs Assessment (the “GCNA” or the “Report”) is delivered subject to the following terms and conditions:

1. This report and analysis are based upon observations for the visible and apparent condition of the building and its major components on the date of the fieldwork. Although care has been taken in the performance of this assessment, ON-SITE INSIGHT, Inc (and/or its representatives) makes no representations regarding latent or concealed defects that may exist and no warranty or guarantee is expressed or implied. This report is made only in the best exercise of our ability and judgment.
2. We have undertaken no formal evaluations of environmental concerns, including but not limited to asbestos containing materials (ACMs), lead based paint, chlorofluorocarbons (CFCs), polychlorinated biphenyls (PCBs), and mildew/mold.
3. Conclusions in this report are based on estimates of the age and normal working life of various items of equipment and/or statistical comparisons. Actual conditions can alter the useful life of any item. When an item needs immediate replacement depends on many factors, including previous use/misuse, irregularity of servicing, faulty manufacturer, unfavorable conditions, Acts of God and unforeseen circumstances. Certain components that may be working when we made our inspection might deteriorate or break in the future without notice.
4. To prepare this report, we used historic data on capital activities and costs, blueprints (when available), and current prices for capital actions. We have not independently verified this information, have assumed that it is reliable, but assume no responsibility for its accuracy.
5. Unless otherwise noted in the report, we assume that all building components meet code requirements in force when the property was built.
6. If accessibility issues are referenced in the report, the site elements, common areas, and dwelling units at the development were examined for compliance with the requirements of the Uniform Federal Accessibility Standards (UFAS), and for Massachusetts properties, the Massachusetts Architectural Accessibility Board (AAB). The methodology employed in undertaking this examination is adapted from a Technical Assistance Guide (TAG-88-11) titled “Supplemental Information About the Section 504 Transition Plan Requirements” published by the Coordination and Review section of the U.S. Department of Justice Civil Rights Division, and the AAB Rules and Regulations, 521 CMR effective July 10, 1987. The Guide also incorporates the requirements of UFAS, published, April 1, 1988 by the General Services Administration, the Department of Defense, the Department of Housing and Urban Development, and the U.S. Postal Service. Changes in legislation and/or regulations may make some observations moot.

7. Response Actions and estimated costs of responses were developed by ON-SITE INSIGHT, Inc. If additional structural work is necessary, costs for some Response Actions may exceed estimates. Whenever the Response Action is to remove, reposition, or modify walls, a competent structural engineer should be retained before any work is done, because such investigation may disclose that a Response Action is either more costly than estimated, or is not possible.
8. Conclusions reached in this report assume current and continuing responsible ownership and competent property management.
9. Regular updates of this plan are recommended to ensure careful monitoring of major building systems and to adjust the program to accommodate unanticipated circumstances surrounding the buildings, operations, and/or occupants.

Signed,

  
Signature

Bob Labadini

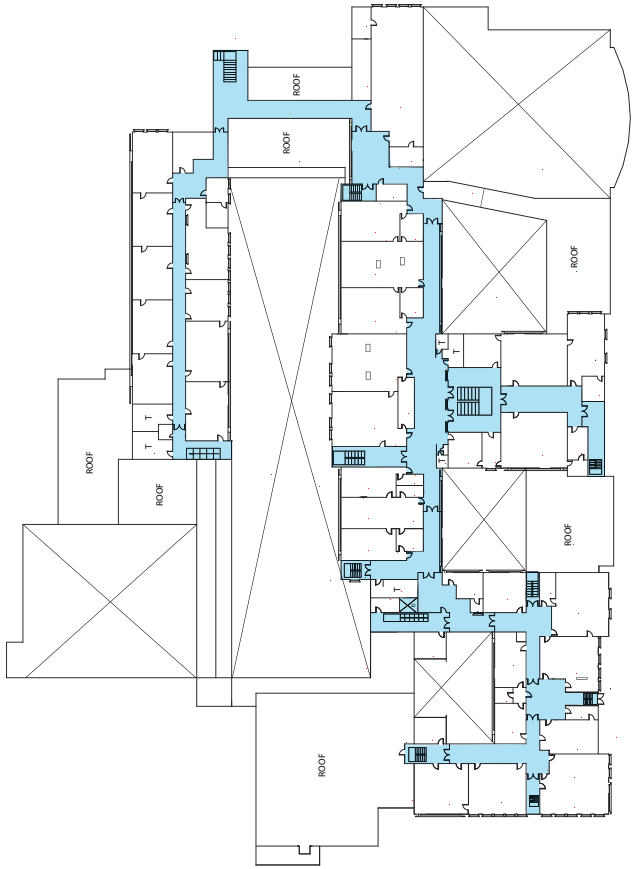
Name

Senior Associate/Mechanical Specialist

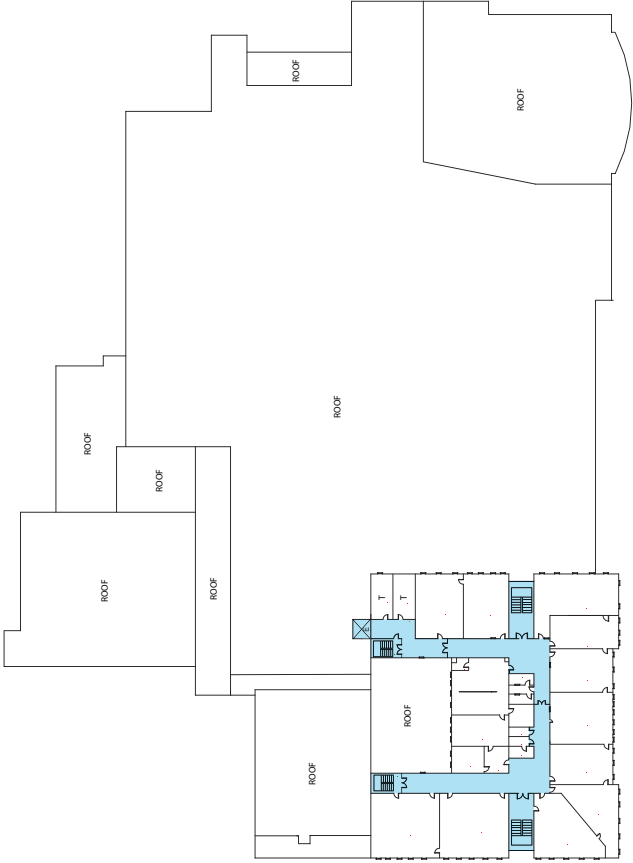
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January 28, 2011

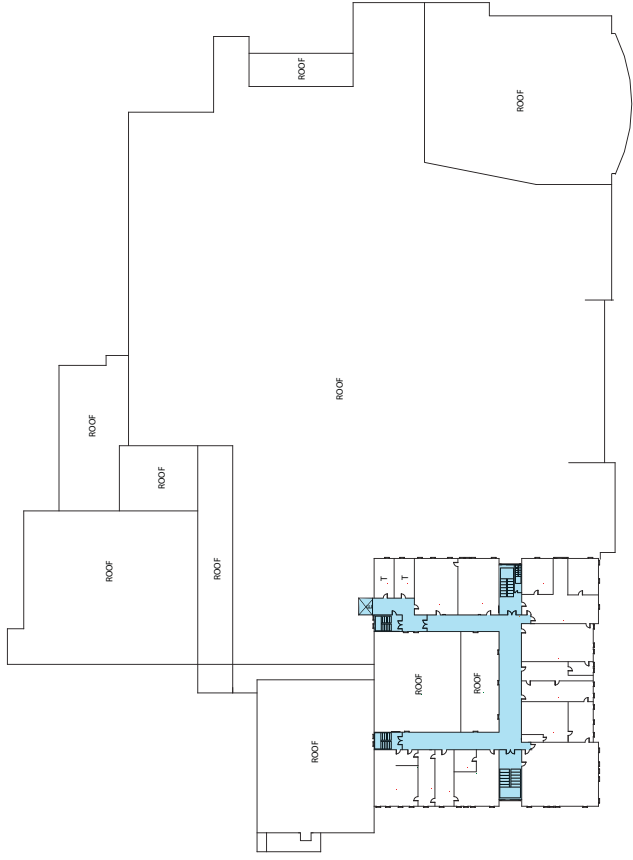
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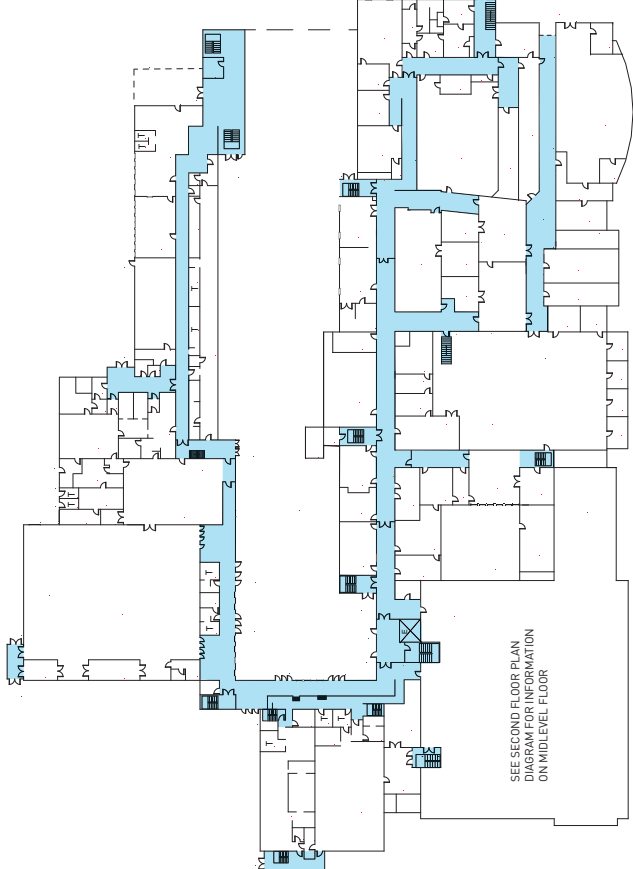
FOURTH FLOOR



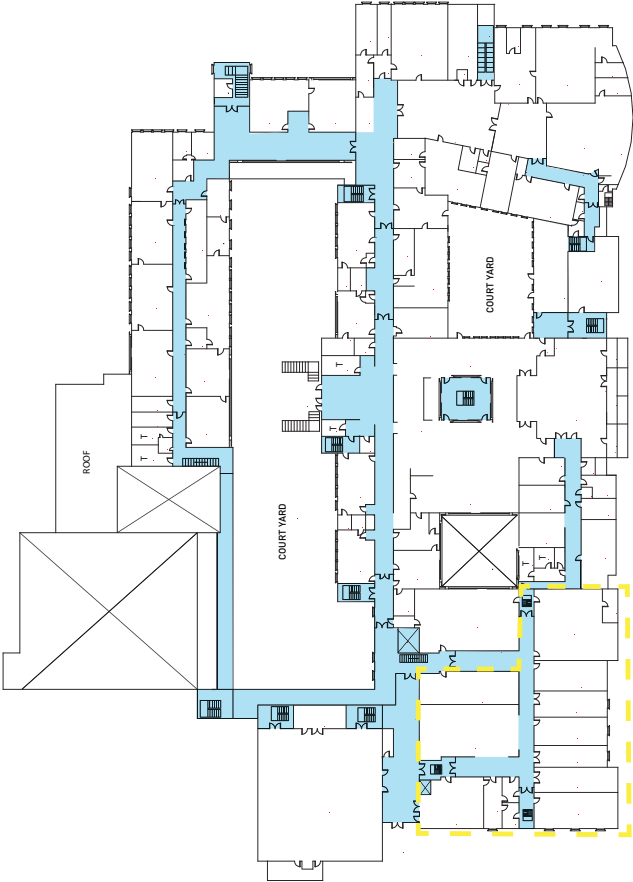
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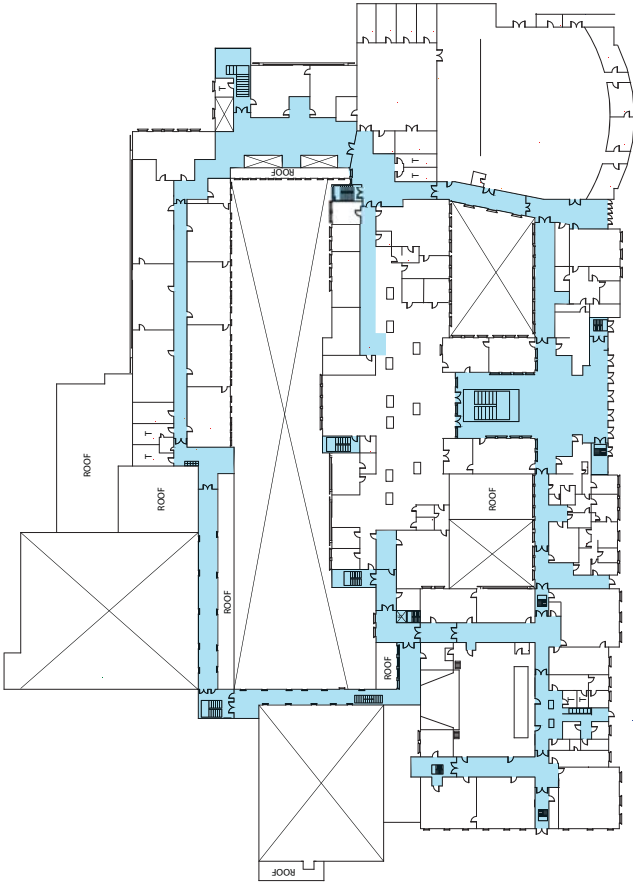
SIXTH FLOOR



FIRST FLOOR



SECOND FLOOR



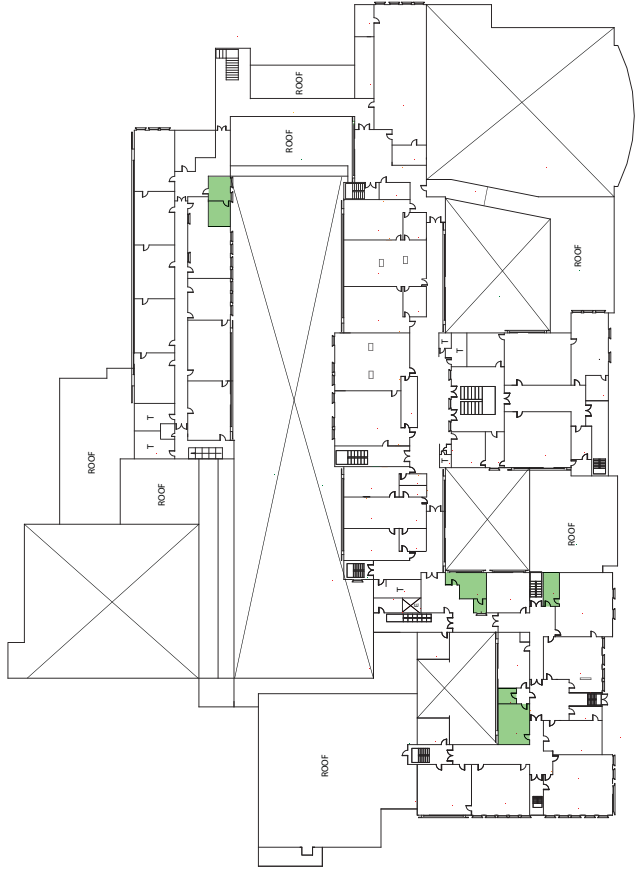
THIRD FLOOR

# Appendix A - Circulation

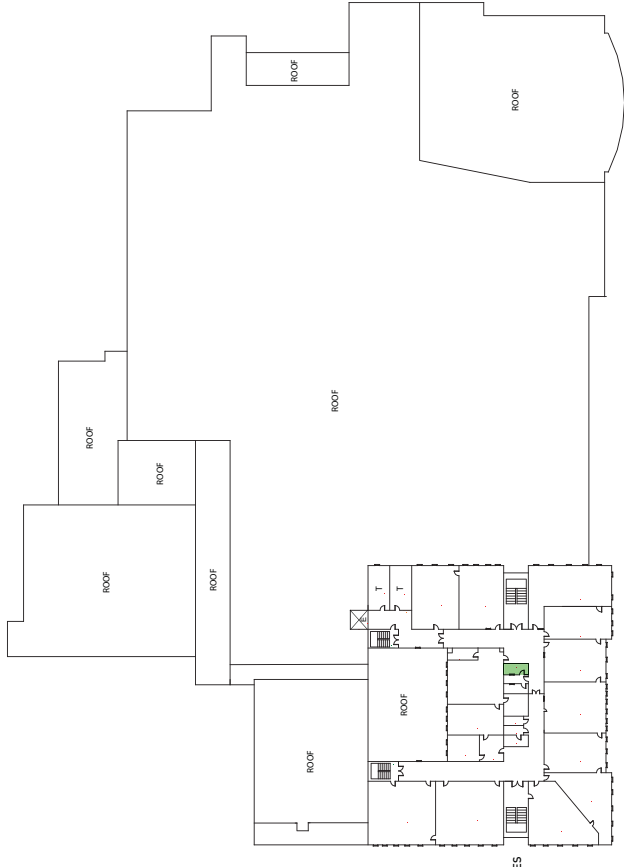
Arlington High School  
Arlington, MA



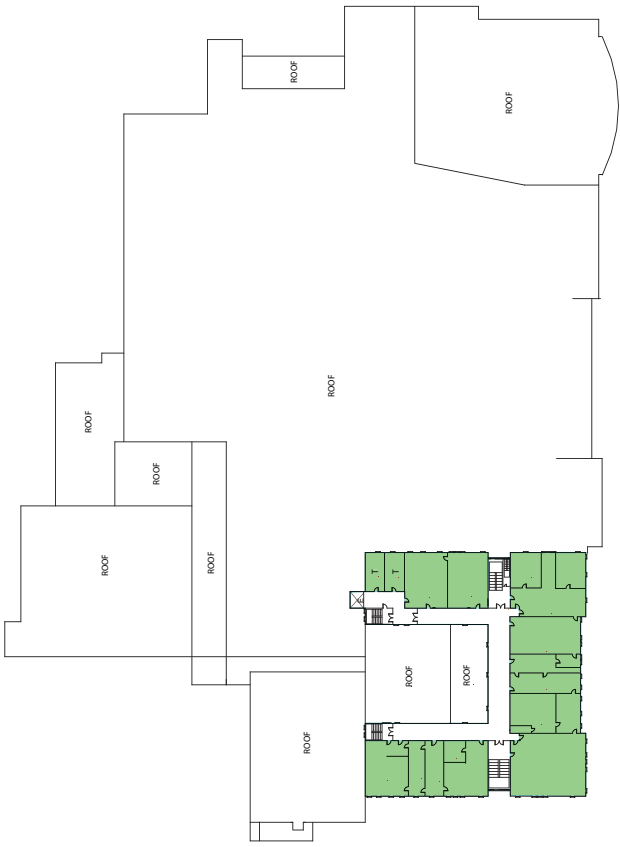
CIRCULATION



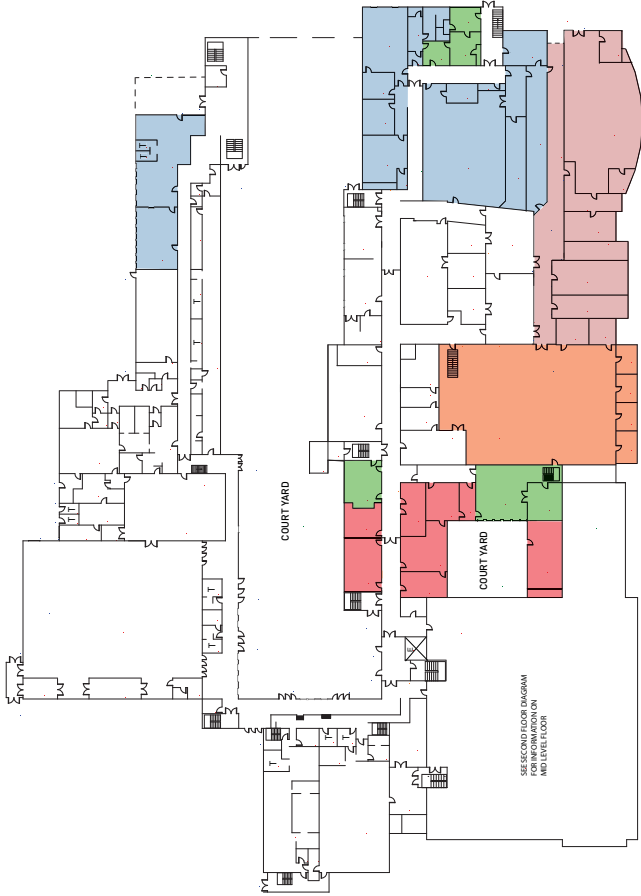
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FIFTH FLOOR



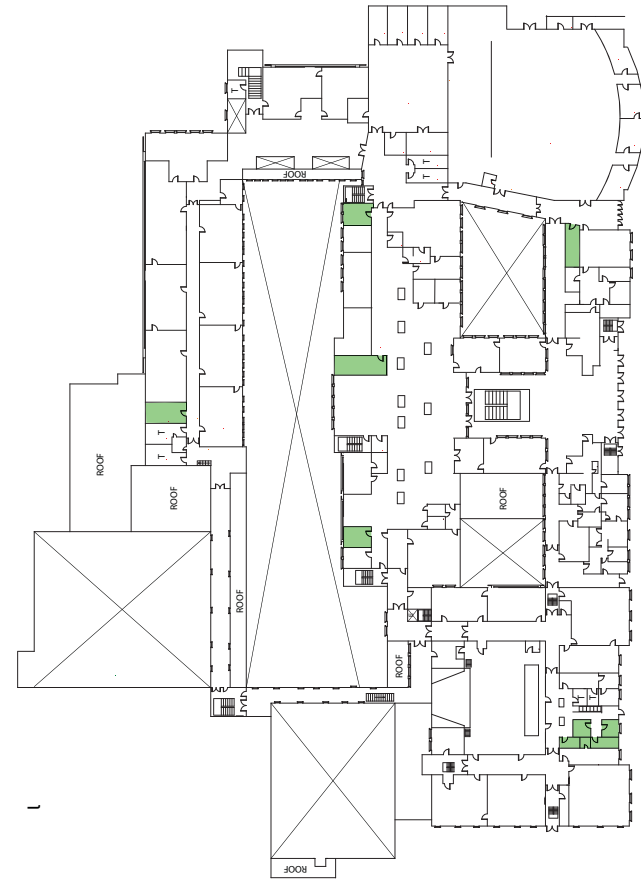
SIXTH FLOOR



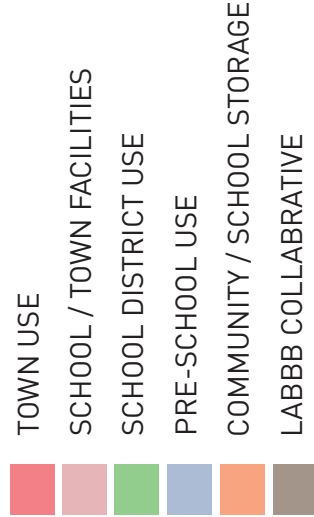
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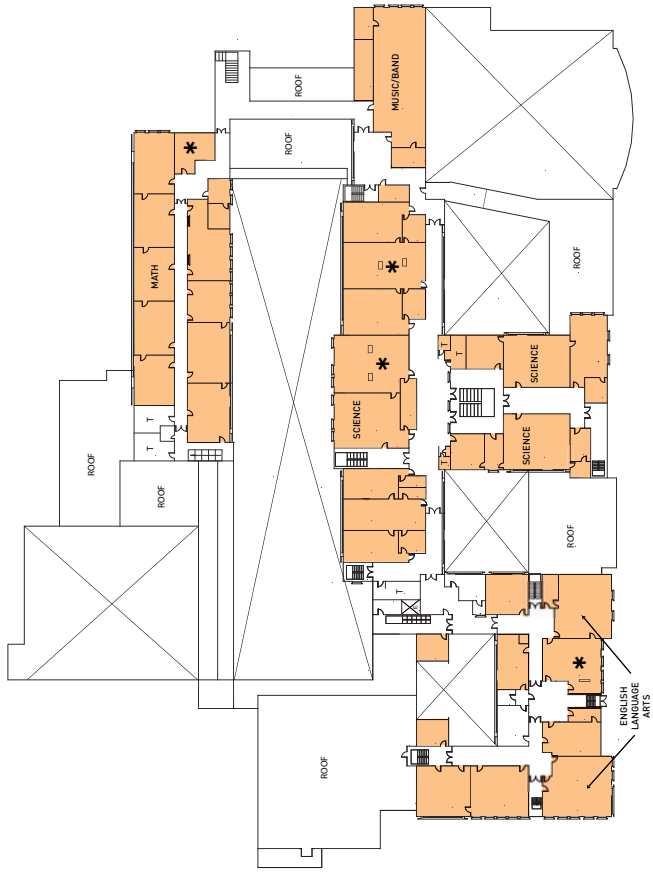


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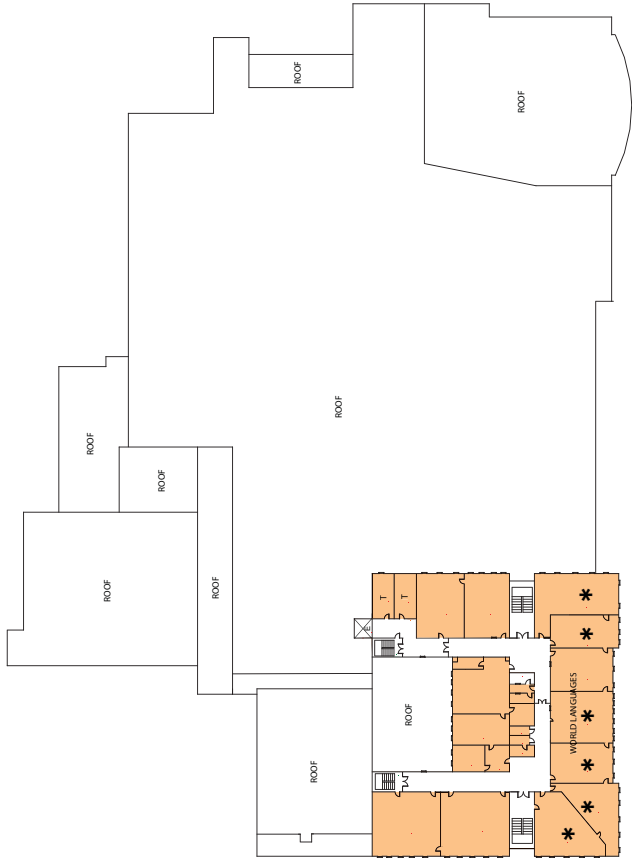


# Appendix B - Non HS Space Use

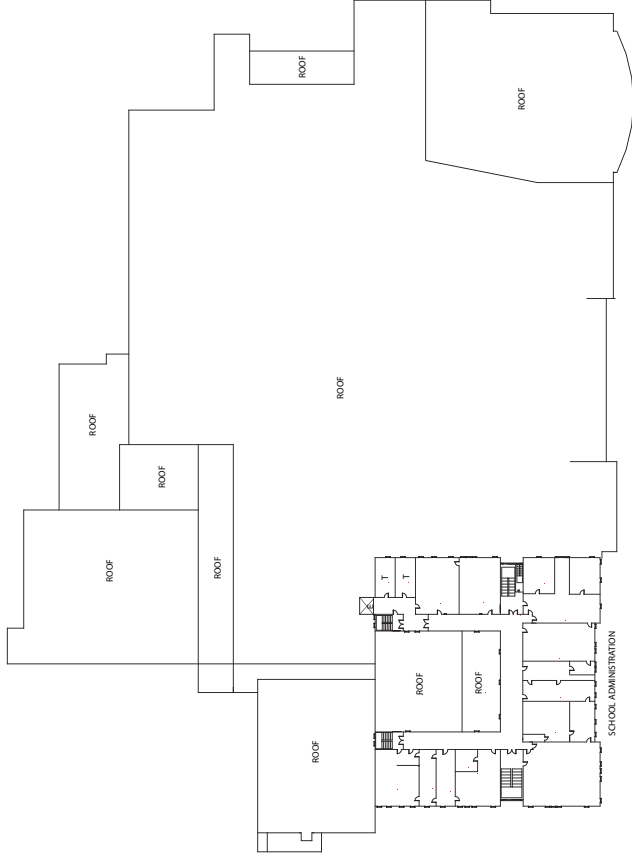
Arlington High School  
Arlington, MA



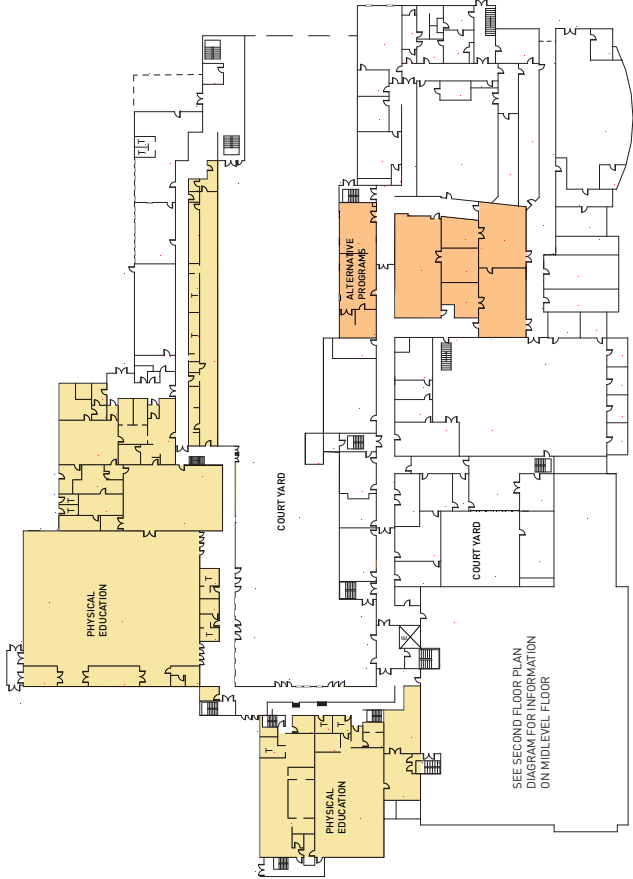
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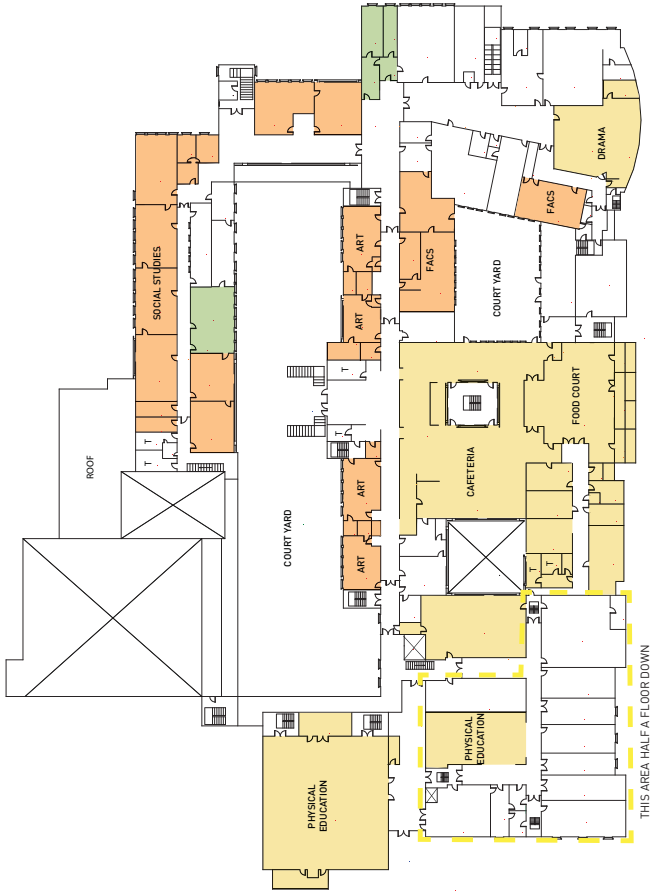
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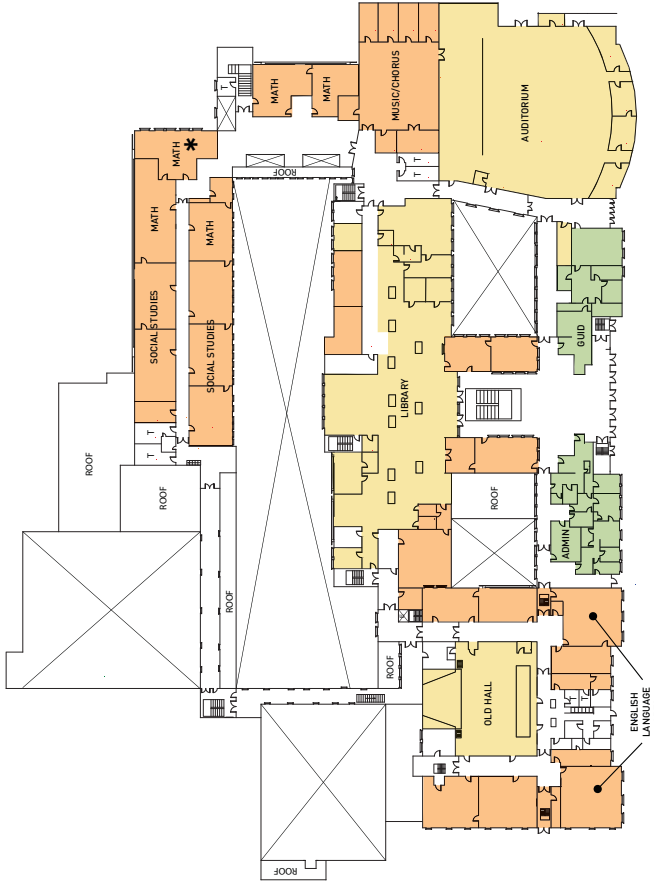
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FIRST FLOOR



SECOND FLOOR



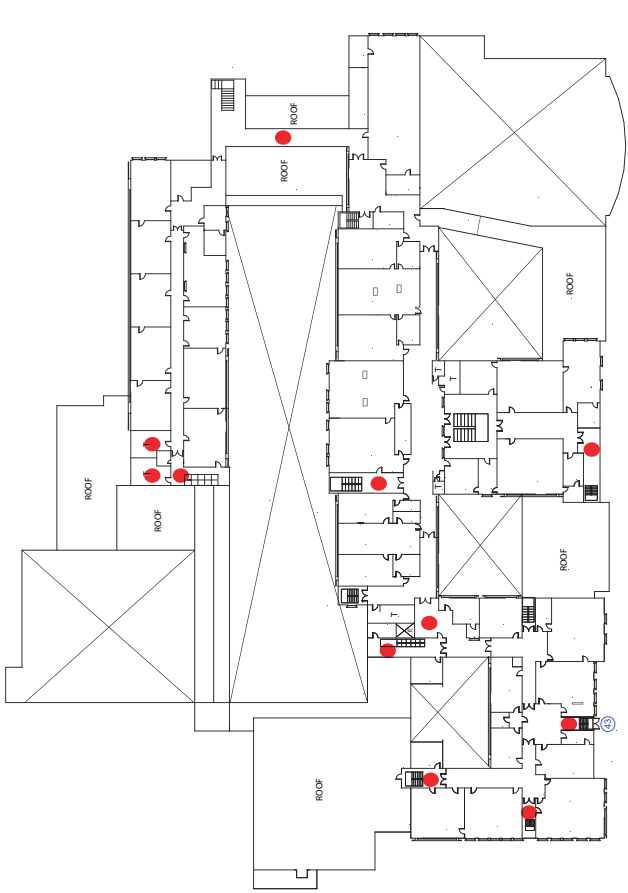
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# Appendix C - HS Program Spaces

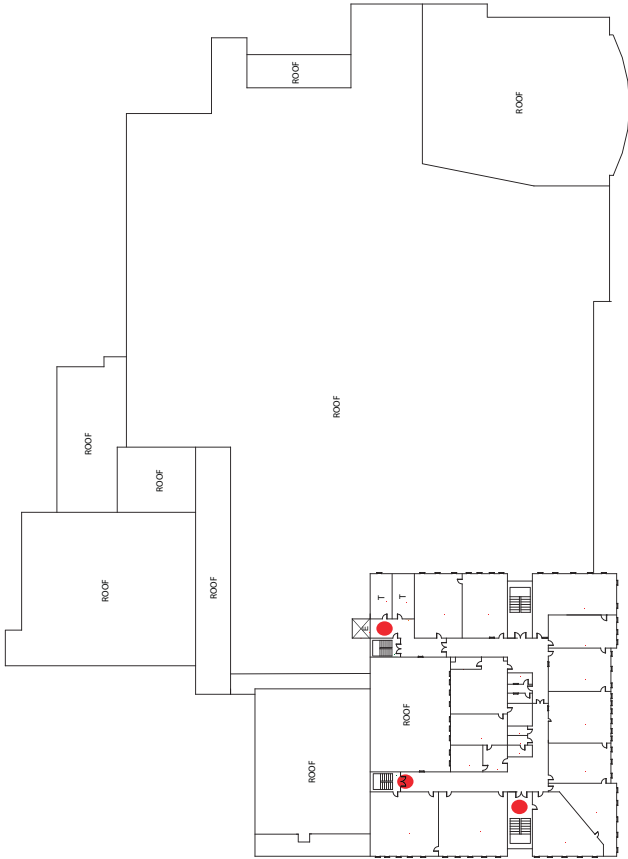
Arlington High School  
Arlington, MA

- ACADEMIC SPACES
- SHARED SPACES
- SUPPORT SPACES
- OBSTRUCTED VIEWS / IRREGULAR SPACE

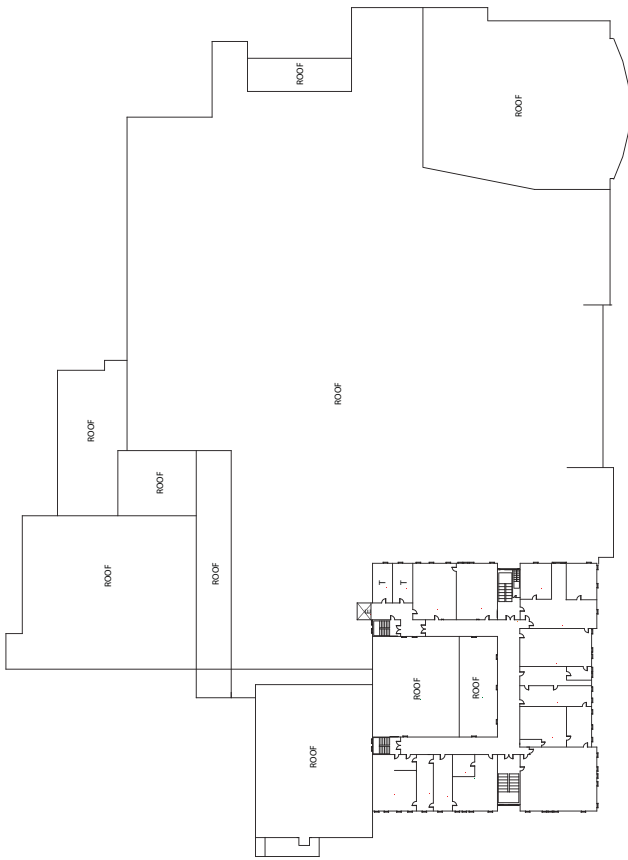




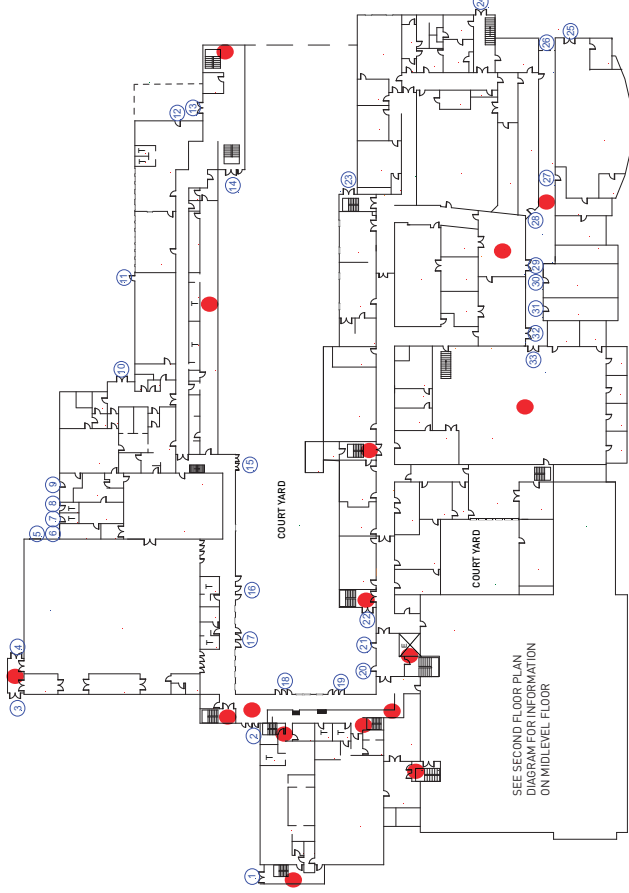
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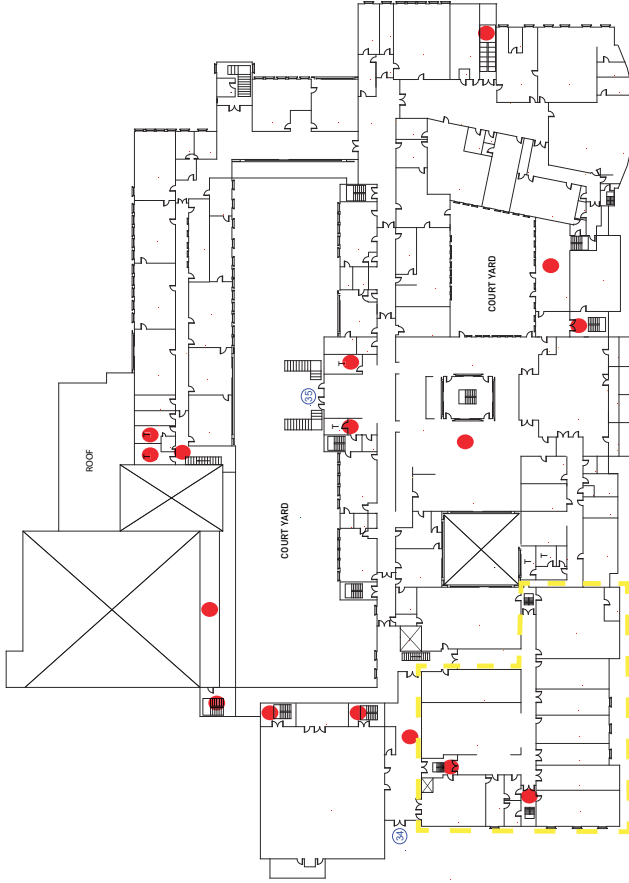
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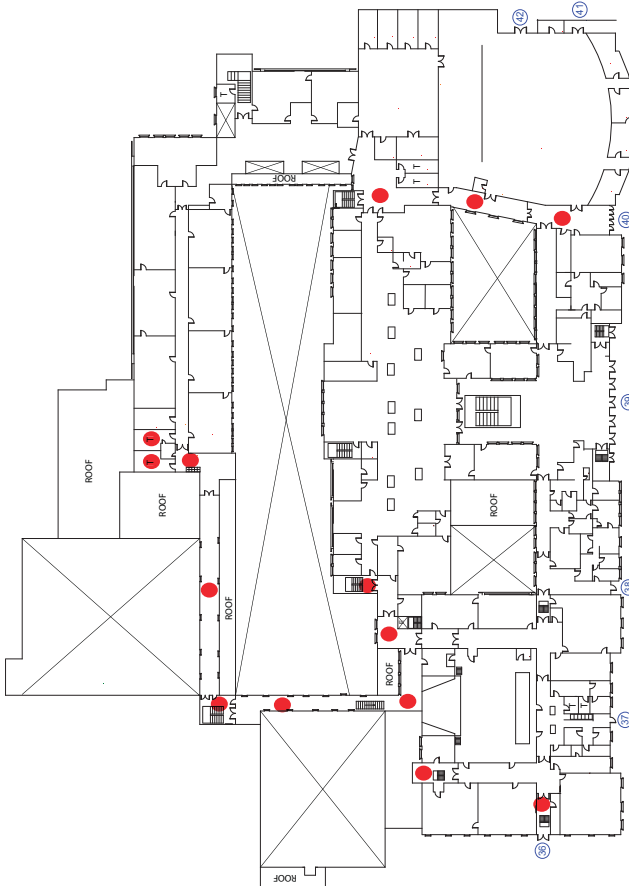
SIXTH FLOOR



FIRST FLOOR



SECOND FLOOR



THIRD FLOOR

# Appendix D - Safety and Security Issues

Arlington High School  
Arlington, MA

- 1 EXTERIOR ACCESS POINTS
- UNSUPERVISABLE AREAS

**NEW ENGLAND ASSOCIATION OF SCHOOLS AND COLLEGES COMMITTEE ON**

**PUBLIC SECONDARY SCHOOLS**



***REPORT OF THE VISITING COMMITTEE***

**Arlington High School Arlington,**

**Massachusetts**

December 2 - December 5, 2012

Timothy Sullivan, Chair Ira Brown, Assistant

Chair Mary Villano, Principal

**STATEMENT ON LIMITATIONS**



## **THE DISTRIBUTION, USE, AND SCOPE OF THE VISITING COMMITTEE REPORT**

The Committee on Public Secondary Schools of the New England Association of Schools and Colleges considers this visiting committee report of Arlington High School to be a privileged document submitted by the Committee on Public Secondary Schools of the New England Association of Schools and Colleges to the principal of the school and by the principal to the state department of education. Distribution of the report within the school community is the responsibility of the school principal. The final visiting committee report must be released in its entirety within sixty days (60) of its completion to the superintendent, school board, public library or town office, and the appropriate news media.

The prime concern of the visiting committee has been to assess the quality of the educational program at Arlington High School in terms of the Committee's Standards for Accreditation. Neither the total report nor any of its subsections is to be considered an evaluation of any individual staff member but rather a professional appraisal of the school as it appeared to the visiting committee.

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Roster of Visiting Committee Members  
 Committee Policy on Substantive Change  
 List of Commendations and Recommendations

## INTRODUCTION

The New England Association of Schools and Colleges (NEASC) is the oldest of the six regional accrediting agencies in the United States. Since its inception in 1885, the Association has awarded membership and accreditation to those educational institutions in the six-state New England region who seek voluntary affiliation.

The governing body of the Association is its Board of Trustees which supervises the work of four Commissions: the Commission on Institutions of Higher Education (CIHE), the Commission on Independent Schools (CIS), the Commission on Public Schools which is comprised of the Committee on Public Secondary Schools (CPSS), the Commission on Technical and Career Institutions (CTCI), the Commission on Public Elementary and Middle Schools (CPEMS), and the Commission on American and International Schools Abroad (CAISA).

As the responsible agency for matters of the evaluation and accreditation of public secondary school member institutions, CPSS requires visiting committees to assess the degree to which the evaluated schools meet the qualitative Standards for Accreditation of the Committee. Those Standards are:

### Teaching and Learning Standards

Core Values, Beliefs, and Learning Expectations  
 Curriculum  
 Instruction  
 Assessment of and for Student Learning

### Support of Teaching and Learning Standards School

Culture and Leadership School Resources  
 for Learning Community Resources for  
 Learning.

The accreditation program for public schools involves a threefold process: the self-study conducted by the local professional staff, the on-site evaluation conducted by the Committee's visiting committee, and the follow-up program carried out by the school to implement the findings of its own self-study and the valid recommendations of the visiting committee and those identified by the Committee in the Follow-Up process. Continued accreditation requires that the school be reevaluated at least once every ten years and that it show continued progress addressing identified needs.

### **Preparation for the Accreditation Visit - The School Self-Study**

A steering committee of the professional staff was appointed to supervise the myriad details inherent in the school's self-study. At Arlington High School a committee of 15 members, including the principal, supervised all aspects of the self-study. The steering committee assigned all teachers and administrators in the school to appropriate subcommittees to determine the quality of all programs, activities and facilities available for young people.

The self-study of Arlington High School extended over a period of 20 school months from October 2010 to September 2012.

Public schools evaluated by the Committee on Public Secondary Schools must complete appropriate materials to assess their adherence to the Standards for Accreditation and the quality of their educational offerings in light of the school's mission, learning expectations, and unique student population. In addition to using the Self-Study Guides developed by a representative group of New England educators and approved by the Committee, Arlington High School also used questionnaires developed by The Research Center at Endicott College to reflect the concepts contained in the Standards for Accreditation. These materials provided discussion items for a comprehensive assessment of the school by the professional staff during the self-study.

It is important that the reader understand that every subcommittee appointed by the steering committee was required to present its report to the entire professional staff for approval. No single report developed in the self-study became part of the official self-study documents until it had been approved by the entire professional staff.

### **The Process Used by the Visiting Committee**

A visiting committee of 16 evaluators was assigned by the Committee on Public Secondary Schools to evaluate Arlington High School. The Committee members spent four days in *Arlington*, reviewed the self-study documents which had been prepared for their examination, met with administrators, teachers, other school and system personnel, students and parents, shadowed students, visited classes, and interviewed teachers to determine the degree to which the school meets the Committee's Standards for Accreditation. Since the evaluators represented public schools, central office administrators, and the public diverse points of view were brought to bear on the evaluation of Arlington High School.

The visiting committee built its professional judgment on evidence collected from the following sources:

- review of the school's self-study materials

- 35.8 hours shadowing 16 students for a half day

- a total of 25 hours of classroom observation (in addition to time shadowing students)

- numerous informal observations in and around the school

- tours of the facility

- individual meetings with 32 teachers about their work, instructional approaches,  
and the assessment of student learning

- group meetings with students, parents, school and district administrators, and teachers

- the examination of student work including a selection of work collected by the school

Each conclusion in the report was agreed to by visiting committee consensus. Sources of evidence for each conclusion drawn by the visiting committee appear in parenthesis in the Standards sections of the report. The seven Standards for Accreditation reports include commendations and recommendations that in the visiting committee's judgment will be helpful to the school as it works to improve teaching and learning and to better meet Committee Standards.

This report of the findings of the visiting committee will be forwarded to the Committee on Public Secondary Schools which will make a decision on the accreditation of Arlington High School.

### **School and Community Summary**

Arlington High School is located in Arlington Massachusetts, 6 miles northwest of Boston. Bordered by the towns of Belmont, Winchester, and Lexington and the cities of Medford, Somerville and Cambridge, it occupies 5.5 square miles of land. Originally settled in 1635 when a deal was brokered with Squaw Sachem for land rights, the town was originally a small village taking its name from the Algonquian word for "swift running water", Menotomy. This name would be recorded in the history of the American Revolution when, on April 19, 1775, following the more well-known Battle of Lexington and Concord, British soldiers had a second encounter at the Battle of Menotomy. Members of the local militia gathered to ambush the retreating Red Coats, resulting in more than half of the casualties inflicted on both sides. The town of Menotomy became incorporated as West Cambridge in 1807, changing its name from West Cambridge to Arlington sixty years later (1867) to honor the fallen soldiers interned in Arlington National Cemetery.

Since its inception, Arlington has been called home by several notable people who have left a lasting impression themselves on the town and its inhabitants. Living in Arlington during the American Revolution, Samuel Wilson would go on to become one of the most famous icons of the United States, donning the title of "Uncle Sam", the patriotic figure emblazoned on multiple ad campaigns for the US Army stating "I want you". Cyrus Dallin is another notable resident whose impact to the town cannot be denied. With his notable sculptures such as *The Appeal to the Great Spirit*, located at the entrance of the Museum of Fine Arts, and *Paul Revere's Ride*, housed at the Old North Church, his artistic masterpieces have influenced many through the United States. Nowhere is the impact of our residents more tangible in the schools than with the legacy of Moxie, one of the first carbonated soft drinks in the US. Thanks to the legacy of Francis Thompson, former president of the Moxie Company, students of Arlington High school have been receiving scholarships for post-secondary education, funded through the sale of Moxie, ranging from \$20 to \$2,000 since 1939.

Demographically, Arlington has been lacking in diversity, although that has started to change in recent years. During the last census, there were 42,389 people living in the town, self-identifying themselves as 90.97% Caucasian, 4.97% Asian, 1.86% Hispanic or Latino, 1.7% African American and .5% as unidentified. Though English is identified as the primary language in the town, 12% of households in the town identify a non-English primary language. Fortunately, through working with programs such as the Metropolitan Council for Education Opportunity (METCO), and Lutheran Services, our demographics at the high school are slightly more diverse with 82% identifying as Caucasian, 10% as Asian/Pacific Islander, 5% as African American, and 3% as Hispanic or Latino.

The median income per household is \$64,344. with an unemployment rate of 3%, while the number of families living below the poverty line is 11.1%. This economic diversity is reflected in our school system as well, with a population of 11.1% of our students receiving Free or Reduced Lunch.

Arlington has endeavored to retain the sense of a small town, while bordering major cities. One endeavor has been the focus on residential construction while limiting industrial development and expansion. This results in a majority of our school budget, 83.9%, being generated by local taxes, while 16.1% is generated by state and federal funds. With these funds, the Arlington School District expended \$12,501.68 per student during the 2009 - 2010 academic year, compared with the state average per student expenditure of \$13,063.73. Recently, in a show of support for public education, the town voted a tax override, helping to offset the rising costs in the system. This is the second override of its nature in five years and will last for three years. The town has recently opted to join the Group Insurance Commission (GIC) in an attempt to reduce healthcare expenditures, infusing the system with much needed additional funds.

In addition to Arlington High School, with a population of 1,237 students, the town is also serviced by Minuteman Regional High School for vocational training located in the adjacent town of Lexington. Arlington High School is also home to the LABBB program (Lexington, Arlington, Bedford, Burlington, Belmont), providing educational programming and support services for students with special needs. The Ottoson Middle School services the entire town with a population of 1,029 students in grades 6, 7, and 8. The town also operates seven K - 5 elementary schools: the Brackett, Bishop, Thompson, Hardy, Peirce, Stratton, and Dallin Schools, located throughout the town in various smaller communities, accommodating 3,092 students.

A town sponsored Integrated Preschool for children between the ages of 3 and 5 years old, provide education and support services for children with special needs. The program also includes general education preschool students with a total of 78 students. Within the school district, there are several non-public schools including Arlington Catholic High School with a population of 791, St. Agnes Elementary School, and Ecole Bilingue School. There is also Germaine Lawrence, a residential all girls facility, and Dearborn Academy, a day school for special education students. A nominal amount of residents do send their children to non-public schools, both within and outside of the school district; and a small population of students is homeschooled.

During their career at Arlington High School, students are expected to complete several academic and civic requirements: four years of English, three years of mathematics, three years of science, three years of history/social studies, three years of physical education/health courses, one year of fine arts, two years of a world language and forty hours of community service.

In 2009, Arlington High School streamlined its course levels to reflect the high academic achievement of its student body. Analysis of our statewide testing showed that 90% of students were scoring at the advanced or proficient level in both ELA and math. This prompted the removal of the College 1 Level, moving all former College 1 students into the Advanced Curriculum. Core Curriculum classes are generally tracked, offering three distinct levels: Curriculum A, Curriculum B, and Honors levels. Most students take their core courses at the Curriculum A and Honors levels. Advanced Placement courses are also offered to juniors and seniors in all content areas. Most non-core classes and electives are heterogeneous, although some do offer Honors options. We have recently begun the transition toward offering several core curriculum courses as heterogeneous classes, with plans to expand this program in the coming years. We also removed all prerequisites for classes several years ago, including AP classes, allowing students the freedom to choose their level of academic rigor. In 2011, 239 students completed the Advanced Placement Exams: 25 were awarded as AP scholars, 18 as AP scholars with honor and 16 as AP scholars with distinction.

Our staff of 86 teachers promotes academic rigor and high standards for all students. We maintain a student to teacher ratio of 15:1, and an average class size of 25 students. Our newly created schedule allows for five 52-minute classes and an extended block of 80 minutes, totaling 340 minutes of instructional time per day and 1,000 hours per year (taking into consideration early release days). The extended block was a staff created addition, helping us to schedule every science course with a lab and allowing every class to have an additional 30 minutes once per seven day cycle. We have also implemented a monthly advisory period and homeroom giving students a greater sense of community and belonging through group discussions, team building activities, and mentoring programs. The advisories have also been used to give the student body a more prominent voice in school matters as they discuss substance abuse, mental health awareness and the development of school policy. Adding to this, the student council has created office hours to hear students' concerns, which are then brought before the principal in bi-weekly meetings.

Each of these steps has crafted Arlington High School into an institution capable of having all students access the curriculum, evidenced in our graduation rate of 99.98%, 94.42% of which continue their education in a four-or two-year college. These efforts are mirrored in our significantly low dropout rate of .009%

To aid in the development of our students and enhance our 21<sup>st</sup> century goals, a district technology plan was developed to update all classrooms in the coming years including wireless access throughout the building, multiple SMARTBoard, projectors, ELMO's, expanding the number of computer labs, a mobile laptop lab, I-touches for classroom use, as well as creating a student email system.

It takes a whole village to raise a child, and Arlington is no exception to this, as we have strived to build strong connections with our community, and they in turn, have extended their efforts on behalf of the students. The Arlington Education Fund, a grant organization, has awarded multiple grants to the high school including financing the purchase

of the first SmartBoard for a classroom and the development of a digital photography class. Our parents have become integral members of our community through our School Council, Parent Advisory Council, Friends of Arlington High School Group, various fundraising events, volunteering at various events including Career Day, and our Athletic Organizations (the Touchdown Club). Our senior students have volunteered to be advisors to our freshman students, focusing on transition issues from middle to high school. We have begun to develop a Senior Internship program with various town businesses and offices including law firms, political campaign offices, the police department, and childcare centers. We are fortunate to have a youth counseling center in the town, The Arlington Youth Counseling Center (AYCC), which has built a strong relationship with the school, offers counseling and other supports for a variety of student emotional needs. In addition, we have recently added a School Resource Officer through the Arlington Police Department, giving our students access to their services during the school day.

Our district and our high school are highly committed to providing an appropriate and challenging education to all students. Our annual goals consistently reflect a continuous process of improvement academically, socially and emotionally. We strive to provide a safe and supportive environment that prepares all students for the 21<sup>st</sup> century. We are always ready to meet the next challenge as evidenced in our current goals of closing the achievement gaps for "at-risk students", supporting academic growth for all students, and preparing for the transition to the Core Curriculum.

## **Arlington High School Learning, Connecting and Caring as a Community.**

### **Mission Statement**

In an effort to foster academic excellence and personal achievement at the highest levels, Arlington High School focuses on learning, connecting, and caring as a community. AHS provides a safe, supporting, nurturing environment in which students can acquire knowledge, values, and intellectual curiosity that will lead to life-long learning. As a community we have agreed upon the following values and habits of mind as foundational principles that will guide all teaching and learning and policy decisions at Arlington High School. They are:

- Integrity,
- Communication,
- Accountability and responsibility
- Respect.
- Effective teamwork,

We believe that living these values and habits of mind on a daily basis will ensure all students a rigorous high school education that will prepare them for their future roles as learners, leaders, and citizens in a 21<sup>st</sup> century democracy.

### **Academic Expectations for Students**

- Gather data and critically evaluate the content, source, and relevance of that data, especially but not exclusively, through the use of technology
- Reason logically, using appropriate qualitative or quantitative methods and use their analysis to answer questions.



Write clearly and effectively.

Listen actively and respond through inquiry, discussion, writing, and various forms of art and movement.

Read and comprehend varied materials and be able to interpret them

Speak clearly and effectively in a variety of contexts

Demonstrate citizenship skills and respect for self and others.

## **21<sup>st</sup> Century Focus Points**

Higher-order thinking skills through interdisciplinary learning, analysis, and synthesis of information.

Media literacy

Math, science, technology, and engineering expertise

Teamwork in a diverse, multicultural world

Stress and time management

Communication skills

A love of learning coupled with a willingness to work hard

# **COMMITTEE ON PUBLIC SECONDARY SCHOOLS STANDARDS FOR ACCREDITATION**

## **TEACHING AND LEARNING STANDARDS**

CORE VALUES, BELIEFS, AND LEARNING EXPECTATIONS

CURRICULUM

INSTRUCTION

ASSESSMENT OF AND FOR STUDENT LEARNING



## Core Values, Beliefs, and Learning Expectations

*Effective schools identify core values and beliefs about learning that function as explicit foundational commitments to students and the community. Decision-making remains focused on and aligned with these critical commitments. Core values and beliefs manifest themselves in research-based, school-wide 22<sup>nd</sup> century learning expectations. Every component of the school is driven by the core values and beliefs and supports all students' achievement of the school's learning expectations.*

1. The school community engages in a dynamic, collaborative, and inclusive process informed by current research-based best practices to identify and commit to its core values and beliefs about learning.

The school has challenging and measurable 21<sup>st</sup> century learning expectations for all students which address academic, social, and civic competencies, and are defined by school-wide analytic rubrics that identify targeted high levels of achievement.

The school's core values, beliefs, and 21<sup>st</sup> century learning expectations are actively reflected in the culture of the school, drive curriculum, instruction, and assessment in every classroom, and guide the school's policies, procedures, decisions, and resource allocations.

The school regularly reviews and revises its core values, beliefs, and 21<sup>st</sup> century learning expectations based on research, multiple data sources, as well as district and school community priorities.

Arlington High School engaged in a dynamic, collaborative, inclusive process over an eight-year period to identify and commit to its core values and beliefs. After the completion of the 2004 NEASC special report, the school community committed to the task of revising the school's mission and vision statement. During the 2004-2005 school year, the entire school read *Good to Great*, by Jim Collins, as a professional development activity. The following school year, the School Improvement Subcommittee (SIS) was created and used *Good to Great* to frame conversations about the direction of the school. The SIS committee led to the formation of the Mission Committee in the 2006-2007 school year. This ad hoc Mission Committee reviewed and revised the school's mission and developed the ICARE values and academic expectations. During the same year, the entire Arlington Public Schools staff read *The World is Flat*, by Thomas Friedman as a professional development activity. As a result of reading this book, teachers, students and parents met in focus groups to discuss and review what 21<sup>st</sup> century skills were most relevant to Arlington as a community and which should be incorporated into their core values, and beliefs about learning. Reports from these focus groups were shared with all stakeholders and ultimately voted on by students, staff and parents. Their preferences were integrated into the final mission statement developed by the Mission Committee. The basic spirit of the mission and the ICARE values is evident when speaking with students and teachers, observing student behavior, observing

instruction, and in the general atmosphere of the school environment. As a result of a long and thorough process of examining current research, discussing community values, and obtaining input from all stakeholders, Arlington High School has a mission statement with relevant core values and beliefs that will guide the work of their students and staff, (teachers, students, self-study)

Arlington High School has identified academic learning expectations that are challenging, measurable, and address academic, civic and social competencies which are defined by a one school-wide holistic rubric. The school has also identified separate 21<sup>st</sup> century focus areas that cross all disciplines and can be powerfully used to show students connections between individual subjects and classes. Following a school-wide read in 2005 of *Good to Great* by Jim Collins, and a district-wide read in 2006 of *The World is Flat* by Thomas Friedman, faculty members, students, and parents met in a variety of committees to discuss the school's mission, academic learning expectations, and 21<sup>st</sup> century skills. From these discussions, the school identified and adopted new academic learning expectations and created and adopted seven 21<sup>st</sup> century focus areas. One holistic rubric exists to measure student progress toward meeting the academic learning expectations, however teachers and students report that this rubric is rarely used and there was no evidence of the rubric in the student work samples reviewed. Additionally, a checklist rubric exists to measure student adherence to the ICARE principles, but there is no evidence of its use. While the school-wide holistic rubric for the academic expectations is only used sporadically, there is evidence that the expectations are often integrated into instruction and assessments across the curriculum. When the school develops and commits to using school-wide analytic rubrics to further define and measure each individual academic expectation for students, it will be able to establish a means to formally quantify individual student achievement of the 21<sup>st</sup> century academic expectations (teachers, students, self-study)

Arlington High School's core values, beliefs and 21st century learning expectations are actively reflected in the culture of the school and guide the school's policies, procedures, and decision-making practices. The school community is proud of its core values ICARE statement that guides teaching, learning, and policy-making. This is clearly evident and embedded within the culture of the school as demonstrated in interactions with students, teachers, parents and support staff. Students reveal a general familiarity with the ICARE habits of mind and many have internalized these principles. Currently, the advisory period serves as a launching point for the introduction and instruction of ICARE principles. At least once per year in advisory, teachers review the ICARE statement and the habits of mind that form the core of the school's civic and social expectations. Students in the AHS drama classes create skits that bring to life the habits of mind listed in the ICARE statement and present them to 9<sup>th</sup> grade students to help them see the application of these principles in their daily life at school. Teachers also understand the school's core values and beliefs and many teachers model the ICARE philosophy in daily instruction. Some examples of curricular decisions made in accordance with the

core values and expectations in mind include: the math department implementing enhanced sections of Algebra and Geometry with an attached lab to provide additional time to students who need it; the English department rewriting its 9<sup>th</sup> and 10<sup>th</sup> grade courses to ensure low-performing students could complete an English course similar to their peers; the history department revising its electives for 11<sup>th</sup> and 12<sup>th</sup> grade students to include more AP courses and electives that emphasize 21<sup>st</sup> century skills; the science department implementing Physical Science as a 9<sup>th</sup> grade course for all students to ensure that all students are prepared for the MCAS; the world language department writing and receiving a grant which allowed them to implement Mandarin Chinese into the curriculum; and the elimination of the lowest level of courses for students. Other evidence of the impact of these expectations include the guidance department's adoption of Naviance to help students personalize their college and career searches. Students at Arlington High School are benefiting from

decisions made by school staff as a reflection of the newly adopted core values, beliefs and learning expectations, (student interviews, parents interviews, classroom observations)

Arlington High School has started to develop a clearly defined plan to regularly review its core values, beliefs, and 21<sup>st</sup> century learning expectations. The comprehensive plan has not been implemented, however pieces of the plan have been worked on over the course of the last several years. Significant effort from multiple stakeholders has led to the creation of a detailed, researched and prioritized plan which will be utilized as the school community moves forward. Thus far, the principal has brought the core values, beliefs and 21<sup>st</sup> century learning expectations to the entire faculty and school council for review. In 2012-13 a committee will be formed comprised of students, teachers, parents, support staff, and administrators to meet twice per year with the charge of keeping the core values, beliefs and learning expectations relevant to student needs. The semi-annual meetings will serve to keep current and consistent with changing values, beliefs, and expectations. Professional development time will be provided to ensure that all staff have input in the process. A data review will be conducted annually using standardized test scores and college acceptance rates. The plan must also address student attainment of the 21<sup>st</sup> century learning expectations. Every four years the principal and school council will bring the core values, beliefs and 21<sup>st</sup> century learning expectations to the school committee meeting for broadcast to the larger Arlington Community. A formalized comprehensive plan researched and developed by multiple stakeholders will enable Arlington High School to remain consistent with its core values and beliefs and 21<sup>st</sup> century learning expectations, (self-study, teacher interviews, school leadership)

### **Commendations**

The identification of a set of core values (ICARE) that are embodied by the vast majority of students and staff and that positively impacts the culture of the school

The dynamic, collaborative and inclusive process by which the school identified and committed to its core values, beliefs and academic expectations

The evidence of curricular changes as a result of the core values, beliefs and learning expectations

The plan to regularly review and update the 21<sup>st</sup> century learning expectations with the input of multiple stakeholders

The faculty reading of *Good to Great* by Jim Collins to frame conversations about the direction of the school, and the district-wide read in 2006 of *The World is Flat* by Thomas Friedman

The extent to which the core values, beliefs about learning, and 21<sup>st</sup> century learning expectations are embedded into the culture of the school

## **Recommendations**

Develop school-wide analytic rubrics for each of the seven school-wide expectations

Implement the plan to regularly review and update the core values, beliefs, and learning expectations

Ensure that the school-wide rubrics measuring the 21<sup>st</sup> century learning expectations is being used across all disciplines by all teachers

## **Teaching and Learning Standard**

## **Curriculum**

*The written and taught curriculum is designed to result in all students achieving the school's 21<sup>st</sup> century expectations for student learning. The written curriculum is the framework within which a school aligns and personalizes the school's 21<sup>st</sup> century learning expectations. The curriculum includes a purposefully designed set of course offerings, co-curricular programs, and other learning opportunities. The curriculum reflects the school's core values, beliefs, and learning expectations. The curriculum is collaboratively developed, implemented, reviewed, and revised based on analysis of student performance and current research.*

The curriculum is purposefully designed to ensure that all students practice and achieve each of the school's 21<sup>st</sup> century learning expectations.

The curriculum is written in a common format that includes:

- units of study with essential questions, concepts, content, and skills

- the school's 21<sup>st</sup> century learning expectations

- instructional strategies

- assessment practices that include the use of school-wide analytic and course-specific rubrics.

3. The curriculum emphasizes depth of understanding and application of knowledge through:
  - inquiry and problem-solving
  - higher order thinking
  - cross-disciplinary learning
  - authentic learning opportunities both in and out of school
  - informed and ethical use of technology.

There is clear alignment between the written and taught curriculum.

Effective curricular coordination and vertical articulation exist between and among all academic areas within the school as well as with sending schools in the district.

Staffing levels, instructional materials, technology, equipment, supplies, facilities, and the resources of the library/media center are sufficient to fully implement the curriculum, including the co-curricular programs and other learning opportunities.

The district provides the school's professional staff with sufficient personnel, time, and financial resources for ongoing and collaborative development, evaluation, and revision of the curriculum using assessment results and current research.

Arlington High School's curriculum is purposefully designed to ensure all students practice and achieve each of the school's 21<sup>st</sup> century learning expectations. It is very clear that teachers inherently design curriculum that reflects the AHS learning expectations, however confusion amongst AHS faculty regarding the role of the school's learning expectations and how they connect to the curriculum is apparent. Furthermore, there is no assumed responsibility for learning expectation(s) amongst curriculum areas, rather each area is responsible for all expectations. Decisions regarding teacher professional development, course structure/ offerings, the use of technology, and student assignments/ assessments within the curriculum have been geared toward the school expectations. Teachers design lesson plans which incorporate AHS learning expectations and some utilize a student-centered approach in order to support the pursuit of achieving the learning expectations. As a result of the purposefully designed curriculum, all Arlington High School students are able to work toward achieving 21<sup>st</sup> century learning expectations, (curriculum guides, teacher interviews, lesson plans, classroom observations)

Arlington High School is in the process of writing a common curriculum that includes units of studies with essential questions, concepts, content, skills, the school's 21<sup>st</sup> century learning expectations, instructional strategies and assessment practices that include the use of school-wide analytical rubrics. Through the use of Atlas Rubicon software, academic departments at AHS have been examining and synthesizing existing curricula into one common format per course. Thus far, most of the templates contain essential questions, concepts, skills, and 21<sup>st</sup> century learning expectations, but instructional strategies, and assessment practices are missing. Establishing curriculum that is comprehensive and follows the same format will ensure that all AHS students have access to engaging curriculum that will help them achieve the 21<sup>st</sup> century learning expectations, (department heads, self-study, curriculum maps)

The curriculum at Arlington High School emphasizes depth of understanding and application of knowledge through inquiry and problem-solving, higher-order thinking, authentic learning opportunities (both in and out of school), and informed/ethical use of technology. The Endicott survey reveals that 78.4 percent of students agree that the content of courses challenge them to think critically and to solve problems. AHS teachers have put a great deal of effort into

creating curriculum (across all departments of the school) that moves beyond rote memorizing and restating to applying, analyzing,

evaluating, and creating ideas as an important part of classroom instruction. Although 80.6 percent of students believes the curriculum emphasizes informed and ethical use of technology, cross-disciplinary learning is rare and undocumented in the curriculum. As stated in the self-study, AHS curriculum remains compartmentalized. There are numerous authentic learning opportunities both in and out of school including the 40-hour community service graduation requirement, survival and wilderness camping, the Senior Capstone Project, and the onsite daycare program. Students who are provided an authentic, enriched curriculum that emphasizes depth of understanding and higher-order thinking are better equipped to develop 21<sup>st</sup> century learning skills. (Endicott survey, lesson plans, classroom observations)

Most Arlington High School taught curriculum is aligned with the written curriculum. In response to the Endicott survey, 67.7 percent of AHS faculty agree or strongly agree that written and taught curricula are aligned. Supervision plays a key role in determining that the written and taught curricula match. In evaluation pre-conferences, teachers and administrators or department heads discuss what will be seen in classrooms and how it fits into the written curriculum. In addition, department heads are in and out of classrooms on an informal basis to observe written curriculum being taught. AHS academic departments are in the process of creating more common assessments with the goal of implementation followed by analysis in order to improve/update curriculum. Common assessments (once reviewed and analyzed) will further support the alignment between written and taught curriculum. Alignment between written and taught curriculum assures all AHS students consistent access to a thoughtfully designed curriculum that promotes higher-order thinking skills, inquiry, and problem-solving, (department meeting agendas & PLC/CLT attendance/log sheets, administration/ department heads, Endicott survey)

Limited curricular coordination and vertical articulation exist between and among all academic areas within Arlington High School as well as with the sending school in the district. AHS does not have a clearly identified curriculum review cycle, including time devoted to the development, review, and evaluation of the curriculum. PLCs have been formed with the charge of aligning to the Common Core Standards and creating common assessments, but meeting times are often devoted to other school initiatives, leaving the teachers to rely on informal curricular coordination. Formal time for collaboration is inconsistent within the content areas, limited across content areas, and occurs occasionally with sending schools for the purpose of articulation of the curriculum. Department heads have become the primary means by which AHS departments obtain information regarding curriculum from the sending school in the district (Ottoson Middle School). This connection between the

department heads and the middle school has led to better success at vertical articulation including curriculum changes in order to eliminate repetition in course work between middle and high school courses. Ongoing curricular coordination and vertical articulation prevent redundancies and gaps in the curriculum, and provide opportunities for connection between and among disciplines which lead to enhanced opportunities for student achievement, (teachers, department heads, Assistant Superintendent of Curriculum)

Staffing levels, instructional materials, technology, equipment, supplies, and the resources of the library/media center are sufficient to fully implement the curriculum, including the co-curricular programs and other learning opportunities. According to the current district budget and an AHS student's ability to work toward achieving 21<sup>st</sup> century learning expectations, staffing levels and class sizes are appropriate. Facilities at AHS are in general disrepair or neglect. The size and number of classrooms is insufficient. The condition of the facilities limits the staff's ability to implement the curriculum. Columns and posts in rooms obstruct student vision and movement. Science labs are not sufficient in size or design for some classes that have larger enrollments. Deficiencies in science laboratory safety and handicap entrance and egress exist in the facility. Science laboratories either have no or limited access to eyewash stations/showers or eyewash stations/showers that have no documentation of current inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements. Although some teachers/ programs have limited access to resources such as appropriate instructional materials, technology, equipment, and supplies, the vast majority of teachers have sufficient resources to implement the curriculum. Almost 75 percent of students agree that AHS provides the necessary instructional materials per course. In addition, students and teachers indicate that the improvements made to the library/media center adequately support implementation of the curriculum including activities and learning opportunities associated with the various co-curricular programs/clubs within the school. Sufficient resources support full implementation of the curriculum and facilitate the ability for students to work toward achieving the 21<sup>st</sup> century learning expectations, (teachers, students, Endicott survey)

Arlington High School does not provide the school's professional staff with sufficient time and financial resources for ongoing and collaborative development, evaluation, and revision of the curriculum using assessment results and current research. Professional development opportunities and stipended positions for curriculum development are made available during the summer; however, informal collaboration regarding curriculum is more prevalent. During SY2010-2011 and SY 2011-2012, the majority of formal staff meeting time was devoted to NEASC preparation. Time was also spent on curriculum review and planning, creating formative



and summative assessments, and the analysis of students work and assessment data. When the school's professional staff is provided with sufficient time for ongoing collaborative development, evaluation, and revision of the curriculum using assessment results and current research, students will benefit from an enriched and consistent curriculum, (staff meeting calendars, teachers, professional development offerings)

## **Commendations**

The AHS staff is committed to providing high quality curriculum to all students

The work of most academic departments to create a common curriculum format via Atlas Rubicon software

Teachers incorporate technology in their curriculum and emphasize informed/ethical use of technology

AHS provides multiple authentic learning opportunities through community service, Senior Capstone Project,

physical education courses such as Survival and Wilderness Camping, and the onsite day care program

Academic departments are working toward creating common assessments to validate the alignment of written and taught curriculum

The focus on depth of understanding and application of knowledge

## **Recommendations**

Establish additional time for the collaborative and ongoing work necessary to maintain 21<sup>st</sup> century standards in curriculum

Develop strategies for creating more interdisciplinary and cross-curricular communication and course work in the curriculum

Include instructional strategies and assessment practices in curriculum maps

Ensure that the facility adequately supports the implementation of the curriculum

Complete the common curriculum template

## **Teaching and Learning Standard**

### **Instruction**

*The quality of instruction is the single most important factor in students' achievement of the school's 21<sup>st</sup> century learning expectations. Instruction is responsive to student needs, deliberate in its design and delivery, and grounded in the school's core values, beliefs, and learning expectations. Instruction is supported by research in best practices. Teachers are reflective and collaborative about their instructional strategies and collaborative with their colleagues to improve student learning.*

Teachers' instructional practices are continuously examined to ensure consistency with the school's core values, beliefs, and 21<sup>st</sup> century learning expectations.

Teachers' instructional practices support the achievement of the school's 21<sup>st</sup> century learning expectations by:

- personalizing instruction
- engaging students in cross-disciplinary learning
- engaging students as active and self-directed learners
- emphasizing inquiry, problem-solving, and higher order thinking
- applying knowledge and skills to authentic tasks
- engaging students in self-assessment and reflection
- integrating technology.

Teachers adjust their instructional practices to meet the needs of each student by:

- using formative assessment, especially during instructional time
- strategically differentiating
- purposefully organizing group learning activities
- providing additional support and alternative strategies within the regular classroom.

Teachers, individually and collaboratively, improve their instructional practices by:

- using student achievement data from a variety of formative and summative assessments
- examining student work
- using feedback from a variety of sources, including students, other teachers, supervisors, and parents
- examining current research
- engaging in professional discourse focused on instructional practice.

Teachers, as adult learners and reflective practitioners, maintain expertise in their content area and in content-specific instructional practices.

Teacher's instructional practices are continuously examined to ensure alignment with the school's core values, beliefs, and 21<sup>st</sup> century learning expectations. Administrators observe classroom teaching and give feedback on strengths and weaknesses utilizing an evaluation instrument. Administrators have been working to adapt the current evaluation tool with the state regulations for all MA educators. The administrator and the teacher engage in dialogue to address weaknesses and deficiencies, and a clear plan is implemented to ensure that the teacher improves instruction to meet the expectations. Most teachers indicated that there is limited time for teachers to engage in peer observations, reflect, and share best practices. Some teachers share instructional practices with peers, but mostly through informal conversations within their own departments. When teachers engage in the evaluation process, reflect on their instructional practices, share with peers and strive to improve instruction aligned with the school's core values, beliefs, and 21<sup>st</sup> century learning expectations, students benefit, (administration, Endicott survey, teacher interview)

Most teachers at AHS engage in a variety of instructional practices which support the achievement of the school's 21<sup>st</sup> century learning expectations. Teachers personalize instruction to deepen students' knowledge of core subject matter by encouraging them to pursue their own curriculum-related interests to a topic at hand. Students frequently select their own research topics in English, social studies, and world language classes, and some seniors participate in the Senior Project class in which they take part in a learning experience driven by their personal interests. Most teachers engage students as active and self-directed learners through instructional techniques such as Socratic seminars, literature

circles, simulations, and cooperative learning. Most teachers at AHS emphasize inquiry, problem-solving, and higher-order thinking. For example, in science classes, students hypothesize, test, and prove or disprove their predictions in lab experiments. Teachers facilitate learning and students frequently analyze documents, synthesize information, and create authentic products. Students apply their understanding of the academic content to the real world in authentic tasks such as using statistical evaluations in math and writing personal memoirs in English. Many teachers integrate technology into their daily instruction. While not all teachers have immediate access to a varied technology, many teachers use technology including but not limited to SmartBoards, Elmo Projectors, Chrome Books, Student Response Clickers, Ipods, Google Docs, Wikispaces, blogs, graphic calculators, and LCD projectors in their instruction to enhance student learning. However, some teachers reported they lack appropriate instructional materials and technology to maintain high levels of student engagement.

Some teachers engage students in self-assessment and reflection. Most teachers encourage students to reflect on their learning by using analytic rubrics prior to submission of an assignment, as well as by using writing folders to track their own areas in need of improvement. Few, if any teachers engage students in formal cross-disciplinary learning, however informal connections between disciplines occur in some classrooms. As a result of the majority of teachers at Arlington High School engaging in a variety of instructional practices, students are engaged in their classes and have multiple opportunities to practice and achieve the 21<sup>st</sup> century learning expectations, (classroom observation, teacher interview, student work)

Most teachers adjust their instructional practices to meet the needs of each student. Teachers in various departments indicated that they very purposefully organize group learning activities to take advantage of the power of students to teach one another. Some teachers provide activities where less capable students are grouped with stronger students in order to engage, support, and improve the performance of the less capable student. Other teachers review student work and provide opportunities for students to revise in order to improve student learning. Some students reported that when struggling to comprehend the subject matter, teachers utilized different strategies to introduce the content in order to increase their learning. However, most teachers indicated that they prefer students come after school to receive additional academic support. The Learning Center, a program available during school and after school, was implemented to provide additional academic support by teachers and peers. As a result, most Arlington High School students benefit from the adjustment of instructional practice and additional support in order to work toward meeting 21<sup>st</sup> century learning expectations, (classroom observation, teacher interview, self-study)

Teachers at AHS use student achievement data from a variety of formative and summative assessments. Some teachers have access to MCAS and PSAT scores, and some teachers analyze the data to inform instruction. Most teachers report they individually and informally examine student work, though according to the Endicott survey, only 38 percent of teachers report having formal opportunities to examine student work to improve their instructional practices. Teachers

at AHS use feedback from a variety of sources to improve their instructional practices. All teachers receive feedback from administrators through supervision and evaluation, and some teachers receive feedback from students through course and unit evaluations. There is no formal practice in place for teachers to observe their peers and to offer and receive feedback, though some teachers report doing it on their own. Only 8 percent of parents reports that teachers have asked diem for feedback about instructional practices, and teachers report that they rarely reach out to parents for feedback on their instruction.

Most teachers engage in professional discourse focused on instructional practice, as seen through the creation of common summative assessments in mathematics, science, history, and English. When a coordinated effort is made to provide time for teachers to collaborate about instruction across the school, AHS will be more able to assure that all students have the opportunity to meet the 21<sup>^</sup> century learning expectations, (department leaders, teacher interviews, Endicott survey).

Most teachers maintain expertise in their content area and in content-specific instructional practices. Teachers at AHS take courses, attend workshops, and go to conferences to maintain expertise in their content areas. Some AHS teachers plan individual goals for professional development by developing Individual Professional Development Plans. AHS teachers earn professional development points on an ongoing basis, and very often share the information and knowledge they learn at department meetings. Teachers have offered mini-courses or workshops to share their individual expertise in their content and in instructional technology with the entire staff. AHS teachers take their responsibility to be experts in their individual subject matter seriously so that they can present the most challenging and rewarding curriculum to their students. As a result of the use of research-based best practices most students at AHS experience instruction which prepares them to achieve 21<sup>^</sup> century skills, (self-study, department leaders, teacher interview)

#### Commendations

- The use of evaluations by administrators to ensure that instructional practices are consistent with the school's core values, beliefs, and 21<sup>st</sup> century learning expectations

- The variety of strategies used by teachers to personalize instruction

- The faculty's commitment to high quality instruction that focuses on inquiry, problem-solving, and higher-order thinking

- The engagement of students as active and self-directed learners through a variety of researched-based instructional techniques

- The implementation of the Learning Center to support student learning

- The teachers who maximize the use of available technology to enhance student learning

- The use of assessments data results to inform instructional practices

#### Recommendations

Provide opportunities for all teachers to engage in peer review and to share best practices with teachers throughout the school community

Ensure all teachers have equitable access to modern technology and appropriate training to enhance instructional practices

Increase opportunities for students to participate in interdisciplinary learning

Increase formal opportunities for teachers of common classes to analyze student work to inform instruction

Increase opportunities for teachers to review data in order to enhance student learning and improve instruction

## **Teaching and Learning Standard**



### **Assessment of and for Student Learning**

*Assessment informs students and stakeholders of progress and growth toward meeting the school's 21<sup>st</sup> century learning expectations. Assessment results are shared and discussed on a regular basis to improve student learning. Assessment results inform teachers about student achievement in order to adjust curriculum and instruction.*

The professional staff continuously employs a formal process, based on school-wide rubrics, to assess whole-school and individual student progress in achieving the school's 21<sup>st</sup> century learning expectations.

The school's professional staff communicates:

- individual student progress in achieving the school's 21<sup>st</sup> century learning expectations to students and their families

- the school's progress in achieving the school's 21<sup>st</sup> century learning expectations to the school community.

Professional staff collects, disaggregates, and analyzes data to identify and respond to inequities in student achievement.

Prior to each unit of study, teachers communicate to students the school's applicable 21<sup>st</sup> century learning expectations and related unit-specific learning goals to be assessed.

Prior to summative assessments, teachers provide students with the corresponding rubrics.

In each unit of study, teachers employ a range of assessment strategies, including formative and summative assessments.

Teachers collaborate regularly in formal ways on the creation, analysis, and revision of formative and summative assessments, including common assessments.

Teachers provide specific, timely, and corrective feedback to ensure students revise and improve their work.

Teachers regularly use formative assessment to inform and adapt their instruction for the purpose of improving student learning.

Teachers and administrators, individually and collaboratively, examine a range of evidence of student learning for the purpose of revising curriculum and improving instructional practice, including all of the following:

- student work

- common course and common grade-level assessments

- individual and school-wide progress in achieving the school's 21<sup>st</sup> century learning expectations

- standardized assessments
- data from sending schools, receiving schools, and post-secondary institutions
- survey data from current students and alumni.

11. Grading and reporting practices are regularly reviewed and revised to ensure alignment with the school's core values and beliefs about learning.

Arlington High School does not yet have a formal process, based on school-wide rubrics, to assess whole-school and individual student progress in achieving the school's 21<sup>st</sup> century learning expectations. There is evidence, however, that many teachers are incorporating these expectations into their classroom instruction and assessment. Teachers report that they regularly refer to these learning expectations as they create unit assignments. Examples of this practice include: English teachers referring to the expectation that students be able to write clearly and effectively; a drama assignment which required students to listen to performances and to respond with their analysis; and science teachers who reference the gathering, analysis, and application of data in their assessments. Teachers across the school take responsibility for helping their students achieve the learning expectations as those expectations fit into the work they are doing on a daily basis. Some departments have initiated discussions about how well students are meeting the school-wide academic expectations but this discussion has not yet grown to scale throughout the school. The efforts among departments and teachers are inconsistent, and information is not yet formally shared with students or parents. According to the Endicott survey, only 17.7 percent of the school staff reports that they use the school-wide rubrics when assessing student work and in meetings, interviews, and other conversations, students were unclear when asked about school-wide rubrics, indicating that use of the school-wide rubric has not permeated the school. When Arlington High School develops and implements a formal process for consistently applying school-wide rubrics, it will be able to assess whole-school and individual student progress in meeting the school's 21<sup>st</sup> century expectations, (teachers, student work, Endicott survey, self-study)

Arlington High School's professional staff does not yet have a formal process to communicate individual student progress in achieving the school's 21<sup>st</sup> century learning expectations to students and their families, or the school's progress in meeting these expectations to the school community. The lack of a formalized structure for assessing student progress on the learning expectations hinders the consistent communication of individual progress. The 21<sup>st</sup> century learning expectations and ICARE values are posted in most classrooms, but there is little consensus among teachers as to how these are evaluated and reported to parents. An exception to this occurs in the special education department in which progress on 21<sup>st</sup> century learning expectations inclusive of ICARE are evaluated and reported to parents at annual IEP meetings. Some individual teachers are providing feedback to students and parents on students' individual attainment of learning expectations through feedback on individual assessments and by communicating with parents through individual phone calls or emails or during teacher conferences. In addition, samples of student work from several departments included cover sheets explaining connections to school-wide expectations. School based documents informing students that they are in danger of failing

to meet graduation requirements includes references to learning expectations in the checklist. There is evidence of sporadic communication of student's attainment of 21<sup>st</sup> century learning expectations; however, without formalizing the assessment of these learning expectations school-wide, it is difficult for the students and their families to gain a holistic picture of their progress. AHS school leaders communicate students' overall academic achievement at meetings with the Arlington School Committee. They share such information as the number of students taking and "passing" AP course and associated tests, the number of students who win awards for the art work they submit to the Boston Globe Scholastic Art Awards, and MCAS results for the school. Since the meetings are televised, this information is broadcast to the community at large. While the communication infrastructure exists, and is used for a variety of items of interest, it is difficult to communicate data for which there is no formal process of collection and analysis. Interestingly, 40 percent of families report that the school provides them with "a formal report, in addition to course grades, which explains my son/ daughter's progress in achieving the school-wide learning expectations." When AHS develops a formal plan to communicate individual student progress and school-wide progress in achieving the school's 21<sup>st</sup> century learning expectations, the school will be able to monitor progress and respond to the needs of individual students and to the needs of the school, (teacher interviews, Endicott survey, student work)

Professional staff in some areas at Arlington High School collects, disaggregates, and analyzes data to identify and respond to inequities in student achievement. Where several teachers teach the same course, such as geometry in the math department or AP US History in the history department, those teachers collaborate on the creation and use of common assessments. The teachers then analyze the data to ensure that classes are moving at the same pace, and that all students taking that course are getting similar rigor and base of knowledge. The science department analyzes MCAS results for questions that less than 40 percent of the students answered correctly, to discover and emphasize topics covered by those questions. Past efforts in this area resulted in the use of double blocks for students struggling with English language arts and math. At the time of the Endicott survey, 32.7 percent of teachers reported that they use data to identify and respond to inequities in student achievement. The progress the school is making in this area is commendable despite the insufficient provision of time for teachers to collaborate. Ensuring that all teachers are gathering and analyzing student assessment data

will allow all teachers to identify and respond to inequities in student achievement, and will result in higher student achievement, (teachers, Endicott survey, assessment committee)

Prior to each unit of study, many Arlington High School teachers communicate to students the school's applicable 21<sup>st</sup> century learning expectations and related unit-specific learning goals to be assessed. Teachers consistently indicate a sense of responsibility for student achievement in the 21<sup>st</sup> century learning expectations. Many teachers mentioned a renewed emphasis on writing across the curriculum since the adoption of the Common Core Standards by the Commonwealth of Massachusetts. Most examples of student work included analytic rubrics, and indications about

which learning expectations were included in the assessment of the assignment, along with unit-related objectives. Students indicated a clear understanding of the expectations for assignments, and the learning expectations they cover. This steady persistence in communicating the applicable 21<sup>st</sup> century learning expectations for each unit helps to embed these learning expectations into the culture of the school, and gives students opportunities to achieve them, (student work, teachers, student shadowing)

Prior to summative assessments, Arlington High School teachers provide students with the corresponding rubrics for that assessment. Analytic rubrics are the norm for most teachers at AHS, and students seem to expect this as the default grading method in the school. Examples of students' work and sample assessments consistently included rubrics. In interviews, and on the Endicott survey, the majority of teachers and students indicated that rubrics were provided for assignments. As a result of the consistent use of rubrics, students have a clear understanding about how they will be assessed on their work, and can approach that work with confidence, (student work, sample assessments, Endicott survey)

In each unit of study, Arlington High School teachers consistently employ a range of assessment strategies, including formative and summative assessments. Student work and interviews with teachers and students indicated that a wide variety of assessment strategies are used across the school and within courses. AHS teachers use quizzes, homework, presentations, research papers, Google sites, student-created newspapers and tests as assessment tools. Formative and summative strategies included conferencing, co-operative learning activities, exit tickets, KWLs and "I Learned" statements, journals, learning logs, problem-solving activities, response groups, self-evaluation, and student response systems (clickers.) The use of this range of assessment strategies allows students to demonstrate their knowledge in a variety of ways, resulting in high achievement and in developing self-confidence, (student work, self-study, sample assessments)

Teachers in some areas collaborate in formal ways on the creation, analysis, and revision of formative and summative assessments, including common assessments. The school occasionally provides designated, formal time for teachers and department heads to collaborate about assessment practices. For example, several departments, including mathematics, science, and history have devoted, and continue to devote, professional meeting time to develop common course assessments, and the English department staff has collaboratively developed common assessments in grades 9,10, and 11. Staff in the English, mathematics, and science departments reviews the MCAS summative assessments the English department reviews PSAT data, and the mathematics and history departments review AP exams to inform modifications in both formative and summative assessments. However, only informal attention is paid to common course assessments. For example, English department teachers have sporadically collaborated to assess student work on common assessments. The school-wide analytic rubrics are rarely used to assess student work, and thus do not inform analysis and/ or revision of assessments. The lack of consistent time for teachers to formally collaborate to



create, analyze, and revise formative and summative assessments limits the ability of the school to identify and address student needs, (teacher interviews, department heads, Endicott survey)

Teachers across the school provide specific, timely, and corrective feedback to ensure students revise and improve their work. English teachers often provide formative feedback on student writing and provide opportunities for students to revise their work prior to submitting it for summative assessment. Likewise, visual arts teachers provide students with feedback for immediate revision while completing assignments. ELL and basic literacy students receive extensive and timely feedback targeting student improvement. Students report that their teachers routinely provide feedback after summative assessments prior to beginning a new unit of study. Specific, timely, and corrective feedback ensures that students are empowered to revise and improve their work, (student work, teacher interview, students)

Teachers pervasively use formative assessments to inform and adapt their instruction for the purpose of improving student learning. The mathematics and English departments use diagnostic assessments early in the year to develop and refine instructional strategies. Teachers across the school use formative assessments during lessons to ensure student understanding: "student response systems," "exit slips," teacher-student conferencing, and cooperative learning activities were evident in classroom observations and reported by both teachers and students. Teachers across the school use the

results of these activities and formative assessments to inform necessary changes in instruction. Teachers' pervasive analysis of data from formative assessments to determine appropriate, necessary changes in instructional practice leads to improvements in student learning, (classroom observations, self-study, teacher interview)

Teachers and administrators, often individually, and in some areas collaboratively, examine a range of evidence of student learning for the purpose of revising curriculum and improving instructional practice. Teachers across the school individually examine evidence of student learning including student work, common course and grade-level assessments, and standardized assessments, to revise curriculum and improve instructional practice. However, only in some areas do teachers collaboratively do so. For example, English teachers occasionally collaborate to examine student learning as demonstrated in MCAS, diagnostic grammar assessments, and common course assessments. Likewise, the mathematics department is developing formal processes to review PSAT, SAT, MCAS, diagnostic assessments, and data from sending schools; the visual arts department occasionally collaborates to share and review student work; the science department occasionally reviews MCAS results; and the history/social science department often reviews AP exam results. In all cases, analysis informs revisions and improvements in curriculum and instructional practices. Administrators often individually examine evidence of student learning to inform revisions in instruction and curriculum. Two examples are "ACCESS for ELLs" and "Scantron Performance Series Web-Based Diagnostics" in math and English language arts, both used to inform instructional practices and curriculum for specific

student sub-groups. Department heads examine a range of evidence of student learning, including those referenced above relative to teachers. However, only 58.2 percent of staff agrees that "teachers and administrators examine a variety and range of student work... to revise and improve curriculum and instructional practices." Teachers in some areas report that student learning data is infrequently shared with them. While individual examination of a range of evidence of student learning by teachers and administrators leads to informed improvement of curriculum and instructional practices, the lack of regular, formal collaboration, including increased sharing and dissemination of data by administration to teachers, hinders revision of curriculum and instructional practices in order to enhance student learning, (teacher interview, department heads, Endicott survey)

Grading and reporting practices are rarely reviewed and revised to ensure alignment with the school's core values and beliefs about learning. The professional staff infrequently reviews and discusses school grading policies in light of the school's core values and beliefs about learning. Only limited procedures, such as occasional comparisons of grading histories of teachers across common courses, attempt to ensure that grading practices are consistent across all subject areas and by all teachers. Some department heads and teachers report consulting the school's core values when designing assessments, but not in more global discussions around grading and reporting practices. In fact, only 58.8 percent of staff agrees "school-wide grading and reporting practices are regularly reviewed and revised," and only 56.6 percent of parents agrees that "teachers' grading practices are aligned with the school's beliefs about learning." While sporadic efforts have been made to revise reporting practices to align with the school's core values and beliefs about learning, such as a 2008 draft "Habits of Mind Mid-Year Report," no such revision has been implemented. "When grading and reporting practices are regularly reviewed and revised to ensure alignment with the school's core values and beliefs about student learning, Arlington High School will ensure equity among grading practices and student experiences." (teachers, school leadership, Endicott survey)

## **Commendations**

The wide variety of assessment strategies, including formative and summative assessments, in order to revise and improve curriculum and instruction used by teachers

The specific, timely, and corrective feedback given by teachers to ensure students revise and improve their work

The practice of providing rubrics to students prior to each summative assessment

The common course assessments developed by several departments during professional meeting time

The pervasive use formative assessments by teachers to inform and adapt instruction

The communication of the applicable school-wide learning expectations to students prior to each unit of study

## **Recommendations**

Provide sufficient formal time for teachers to collaborate in the creation, analysis, and revision of formative and summative assessments

Develop and implement a formal process, based on school-wide rubrics, to assess whole-school and individual students progress in achieving the school's 21<sup>st</sup> century learning expectations

Develop and implement a mechanism to communicate individual and whole-school progress on the school's 21<sup>st</sup> century learning expectations to all stakeholders

Formalize and implement school-wide the process of collecting, disaggregating, and analyzing data to identify and respond to potential inequities in student achievement

5. Ensure that grading and reporting practices are regularly reviewed to ensure alignment with the school's core values and beHefts about learning

# **COMMITTEE ON PUBLIC SECONDARY SCHOOLS STANDARDS FOR ACCREDITATION**

## **SUPPORT STANDARDS**

### **SCHOOL CULTURE AND LEADERSHIP**

### **SCHOOL RESOURCES FOR LEARNING**

### **COMMUNITY RESOURCES FOR LEARNING**

#### **Support Standard**

#### **School Culture and Leadership**

*77K school culture is equitable and inclusive, and it embodies the school's foundational core values and beliefs about student learning. It is characterized by reflective, collaborative, and constructive dialogue about research-based practices that support high expectations for the learning of all students. The leadership of the school fosters a safe, positive culture by promoting learning, cultivating shared leadership, and engaging all members of the school community in efforts to improve teaching and learning.*

The school community consciously and continuously builds a safe, positive, respectful, and supportive culture that fosters student responsibility for learning and results in shared ownership, pride, and high expectations for all.

The school is equitable, inclusive, and fosters heterogeneity where every student over the course of the high school experience is enrolled in a minimum of one heterogeneously grouped core course (English/language arts, social studies, math, science, or world languages).

There is a formal, ongoing program through which each student has an adult in the school, in addition to the school counselor, who knows the student well and assists the student in achieving the school's 21<sup>st</sup> century learning expectations.

In order to improve student learning through professional development, the principal and professional staff:

engage in professional discourse for reflection, inquiry, and analysis of teaching and learning  
use resources outside of the school to maintain currency with best practices  
dedicate formal time to implement professional development  
apply the skills, practices, and ideas gained in order to improve curriculum, instruction, and  
assessment.

School leaders regularly use research-based evaluation and supervision processes that focus on improved student learning.

The organization of time supports research-based instruction, professional collaboration among teachers, and the learning needs of all students.

Student load and class size enable teachers to meet the learning needs of individual students.

The principal, working with other building leaders, provides instructional leadership that is rooted in the school's core values, beliefs, and learning expectations.

Teachers, students, and parents are involved in meaningful and defined roles in decisionmaking that promote responsibility and ownership.

Teachers exercise initiative and leadership essential to the improvement of the school and to increase students' engagement in learning.

The school board, superintendent, and principal are collaborative, reflective, and constructive in achieving the school's 21<sup>st</sup> century learning expectations.

12. The school board and superintendent provide the principal with sufficient decision-making authority to lead the school.

The Arlington High School community provides a safe, positive, respectful, and supportive culture that fosters student responsibility for learning and results in shared ownership, pride, and high expectations for the vast majority of its students. The core values as embodied in the ICARE acronym are evident in student behavior in the hallways, classrooms and alternative programs at AHS. The school offers a range of athletic and interest activities that foster a sense of belonging and pride for most students. These activities represent a broad range of student interests from GSA to Best Buddies. There are also myriad leadership and community service opportunities. Students feel safe and have experienced little, if any, bullying, hazing or intentional racial disrespect. Administration deals with issues of disrespect and bullying in an effective and timely manner in most cases. Specific minority populations are less invested in the school community and perceive lesser degree of acceptance and respect. Certain populations do not demonstrate the same level of academic and social success as peers in the majority population. Students are proud to be members of the AHS community and exhibit behaviors consistent with the school's core values, (students, parents, faculty interviews)

Although not every student at AHS is enrolled in at least one heterogeneously grouped class, AHS has made significant strides in ensuring that every student has access to heterogeneously grouped classes in core and elective course areas. The move toward academic equity and inclusivity began in the 20032004 school year when the Arlington School Committee removed all grade-based pre-requisites as a criterion for keeping students from enrolling

in a particular course. Up until that time, students could only enroll in Honors courses with an A or A- in the previous course and with a teacher recommendation. Although a protracted process is still in place for lower-level students to enroll in AP classes, these classes are made available to the AHS student community on the whole. As a result, AHS students have access to more challenging curricula and can become productive members of an equitable and inclusive classroom focused on high expectations, (students' schedules, course catalog, student interviews)

Most students at Arlington High School participate in the advisory program and advisors work to form positive relationships with students, but advisory meetings are too infrequent. The infrequency of advisory meetings (there are only seven meetings scheduled for the 2012-2013 school year) makes it difficult for advisors and students to form strong relationships in a formal setting. According to a school-wide advisory memorandum, advisory meeting topics are timely and relate to current school

topics and issues. The lack of clarity regarding the school-wide 21<sup>st</sup> century learning expectations and rubrics that assess them, serves as an impediment to advisors assisting students with meeting these expectations. School-wide social and civic issues are highlighted and strengthened, but a lack of regular advisory meetings impacts culture and connections between adults and students, (advisory schedule, teacher interviews, PowerSchool)

The district and school leadership teams provide some formal time for the professional staff to improve their practice; however, that time is not always used effectively. Most staff and professional development time was spent on the NEASC self-study. There is little evidence that available time was used to engage in meaningful conversations about the core beliefs of the school and how to align practices with the school's beliefs. While some departments make effective use of professional development time, the available time needs to be used effectively across all departments. When AHS uses their professional development time effectively, curriculum, instruction, and assessment will offer an opportunity for improved student achievement, (teacher interviews, Endicott survey, self-study)

AHS leaders regularly use research-based evaluation and supervision processes that focus on improved student learning. There is evidence that school administration is dedicated to implementing the new evaluation standards that will benefit all students at AHS. Members of the leadership team participate in professional development directly related to the use of the new evaluation tool as it relates to increased student success. The leadership team also uses various research-based models to evaluate and supervise the faculty. By focusing on the learning needs of all students, administrators are working to ensure that they will experience increased success and investment in the learning process, (administrators, self-study, updated PD documentation)

The organization of time at AHS does not support research-based instruction or professional collaboration. The master schedule at AHS includes a rotating schedule with five 51 minute periods and one 84 minute period for each major subject per seven-day rotation. The schedule is developed to accommodate a traditional use of instructional

time, leaving teachers with some limited opportunity to develop lesson plans that utilize extended learning blocks. There is time for departments to address curriculum development, reviewing student work, and developing common assessments. The schedule does not support collaboration between and among teachers, leaving them dependent upon contractual department meeting and professional development time beyond the school day for professional conversations. The schedule and organization of time for instruction at AHS must allow for greater use of research-based best practices and professional collaboration to maximize students' ability to meet the learning expectations, (student shadowing, lesson plans, self-study)

Student load and class size, with the exception of science labs and art rooms, enable AHS teachers to meet the learning needs of the majority of students. In the past year since the self-study was completed, class size has been moderated to allow teachers to better meet the needs of their students. Teachers who reported class sizes approaching or exceeding 30 are now reporting more reasonable teaching loads. However, overcrowding still exists in isolated settings including science labs and some visual arts studios. Overcrowding in settings with lab and studio equipment presents significant safety issues as well as diminishing effective instruction and attention to the needs of individual students. Appropriate class sizes in all classes will help ensure that students are able to meet the school's expectations, (teacher interviews, self-study, observations)

The AHS principal, working with other building leaders, provides instructional leadership that is rooted in the school's core values, beliefs, and learning expectations. The majority of faculty members feel that the principal and other school-based leaders provide leadership consistent with the school's core values and beliefs. Veteran teachers commented extensively that the AHS principal enforces high expectations and behaviors consistent with the core values and beliefs. Willingness to take a "firm stand" and to make hard decisions were comments made by teachers related to the AHS principal's leadership methods. The principal has been an outspoken advocate for the school's advisory program and has sent bulletins and memos to staff and parents focusing on the importance of high standards in both academic and social behavior. Some teachers, however, felt that the principal was not always visible last year and that communication of expectations could have been more effective and timely. These same teachers also commented that these traits have improved during this current school year and that the principal does model high expectations aligned with the school's core values. The principal's instructional leadership is rooted in the school's core values, and beliefs about learning assisting students in achieving the learning expectations, (teacher interviews, administrator interviews, Endicott survey)

AHS teachers, students, and parents have the opportunity to be involved in meaningful and defined roles in decision-making that promote responsibility and ownership. While only 28.1 percent of students felt they had input in important decisions made at school, evidence suggests that opportunities are available to students who choose to become involved. A school council has been created and approves the School Improvement plan and has input on the

school budget. Parent interviews suggested that parents do feel invested in the decision-making process while the Endicott survey shows that less than half of parents actually feel that they have opportunities to be involved in important decisions made at the school. Administrators also mentioned in interviews that they have an open door policy with regards to parent decision-making and concerns. During parent interviews, several parents voiced agreement with this statement. Increasing involvement of teachers, parents, and students in school decision-making will lead to greater proprietorship on the part of the school community, (teacher interviews, students, parents, Endicott survey)

AHS teachers exercise initiative and leadership essential to the improvement of the school and to increase students' engagement in learning. AHS teachers have been involved in the change process and have created a number of clubs and activities, including the Spanish Fiesta Tour, the Nagaokakyo Exchange Program, Club Day, and a peer mediation group. Additionally, events such as a mental health awareness day, a multicultural day and talent show, and the SAVE Club Environmental Awareness Week were organized by various faculty and staff members. Furthermore, AHS teachers have created a faculty senate to address school improvement issues teachers feel should be brought before the administration. Teacher initiatives positively impact school culture and students' engagement in learning. (Standard committee, faculty senate structure memorandum, interviews)

The Arlington School Committee, superintendent, and AHS principal work collaboratively, reflectively, and constructively to assist students in achieving the school's 21<sup>st</sup> century learning expectations. The principal presents school-related documents to the superintendent and school committee in open and public meetings. School committee members review these documents to ascertain whether academic expectations and district goals have been considered. Additionally, when difficult district budget cuts have been made over the past few years, the guiding principle for such decisions was how best might the district and high school administration safeguard its mission of furthering high 21<sup>st</sup> century expectations for all students. To this end, the Arlington School Committee approved a set of district goals that speak their commitment to increased academic achievement in core areas expanding technology, expanding communications systems, supporting professional development initiatives focused on 21<sup>st</sup> century skills, and supporting the work of Collaborative Learning Teams (CLTs). As a result of collaboration, students are supported as they work towards embodying the school's 21<sup>st</sup> century learning expectations, (self-study, district memorandum, administrators interviews)

The Arlington Public School Committee and the superintendent have delegated authority to the interim principal to enable her to lead the high school. There is nothing officially stated in the district policy and procedures manual that specifically delineates the decision-making authority granted to the principal by the school committee and the superintendent. The district policies and procedures do,



however, instruct the superintendent to establish clear understandings with personnel of their working relationship and expectations, and grant the superintendent the authority to refer matters requiring certain actions to the appropriate personnel. Part I, Title XII, Chapter 71, Section 59B of the Arlington general laws, deals with principals, their appointment, compensation, and duties. The superintendent, principal, and assistant principal also reported having a good working relationship and an open door policy that is further reinforced by high school and district offices located in the same building. Strong administrative delegation of authority at the district level results in a robust high school leadership that supports school culture and 21<sup>st</sup> century education, (district policies and procedures, Arlington general laws, administration interviews)

### **Commendations**

The existence of a positive school culture, which makes AHS a safe and welcoming place for students and staff

The impressive array of extra-curricular clubs and organizations, funded by the district, available to the student population

The exceptional demeanor and deportment of students in the school indicating a respectful and supportive school culture

The strong communication and collaboration between the school committee, superintendent, and principal

The principal's instructional leadership and advocacy for the school's core values and beliefs about learning and the programs that support them

The dedication by administrators to research-based supervision and evaluation that is focused on the improvement of teaching and learning

The hiring of new faculty members that has resulted in more manageable classes sizes

The AHS faculty's initiative in creating a number of one-time or short-term events that foster student involvement, such as after-school activities, international exchange programs, and community service opportunities that fosters student involvement

The lack of barriers to general student enrollment in core and elective courses

The school developing advisory program which ensures that all students have at least one adult in the school, in addition to the school counselor, who knows the student well, and assists the student in achieving the school's 21<sup>st</sup> century learning expectations

The leadership and initiative demonstrated by teachers essential to the improvement of the school

### **Recommendations**

Ensure that research-based instructional strategies and teacher collaboration are supported by the school schedule

Ensure that every student over the course of their high school experience is enrolled in a minimum of one

heterogeneously grouped core class (English/ language arts, social studies, math, science, or world language)

Involve teachers in the identification of professional development focused on the improvement of student learning and success

Ensure that the school's 21<sup>st</sup> century learning expectations are an integral part of the advisory program agendas

Develop and implement a plan to address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards

Implement strategies to ensure that students, teachers, and parents take advantage of opportunities to participate in the decision-making process

### Support Standard



#### School Resources for Learning

*Student learning and well-being are dependent upon adequate and appropriate support. The school is responsible for providing an effective range of coordinated programs and services. These resources enhance and improve student learning and well-being and support the school's core values and beliefs. Student support services enable each student to achieve the school's 21<sup>st</sup> century learning expectations.*

The school has timely, coordinated, and directive intervention strategies for all students, including identified and at-risk students, that support each student's achievement of the school's 21<sup>st</sup> century learning expectations.

The school provides information to families, especially to those most in need, about available student support services.

Support services staff use technology to deliver an effective range of coordinated services for each student.

School counseling services have an adequate number of certified/licensed personnel and support staff who:

- deliver a written, developmental program
- meet regularly with students to provide personal, academic, career, and college counseling
- engage in individual and group meetings with all students
- deliver collaborative outreach and referral to community and area mental health agencies and social service providers
- use ongoing, relevant assessment data, including feedback from the school community, to improve services and ensure each student achieves the school's 21<sup>st</sup> century learning expectations.

The school's health services have an adequate number of certified/licensed personnel and support staff who:

- provide preventative health services and direct intervention services
- use an appropriate referral process
- conduct ongoing student health assessments
- use ongoing, relevant assessment data, including feedback from the school community, to improve services and ensure each student achieves the school's 21<sup>st</sup> century learning expectations.

Library/media services are integrated into curriculum and instructional practices and have an adequate number of certified/licensed personnel and support staff who:

- are actively engaged in the implementation of the school's curriculum
- provide a wide range of materials, technologies, and other information services in support of the school's curriculum
- ensure that the facility is available and staffed for students and teachers before, during, and after school
- are responsive to students' interests and needs in order to support independent learning

conduct ongoing assessment using relevant data, including feedback from the school community, to improve services and ensure each student achieves the school's 21<sup>st</sup> century learning expectations. 7. Support services for identified students, including special education, Section 504 of the ADA, and English language learners, have an adequate number of certified/licensed personnel and support staff who:

- collaborate with all teachers, counselors, targeted services, and other support staff in order to achieve the school's 21<sup>st</sup> century learning expectations
- provide inclusive learning opportunities for all students
- perform ongoing assessment using relevant data, including feedback from the school community, to improve services and ensure each student achieves the school's 21<sup>st</sup> century learning expectations.

Arlington High School has timely, coordinated, and directive intervention strategies for all students, including identified and at-risk students, which support each student's achievement of the school's 21<sup>st</sup> century learning expectations. Students are assigned to a guidance counselor and a dean, both of whom provide primary support services. According to results from the Endicott survey, 83 percent of students say that they know who to ask for help at school if they have a problem. Also, all students meet on a regular basis with an advisor in groups of 15 to 20 students. The Student Support Team (SST) meets to discuss students believed to be at-risk academically, socially, or emotionally, and provide interventions such as substance abuse evaluations, stress reduction/ anger management groups, and therapeutic counseling. The Learning Center, staffed by licensed teachers, provides remedial and tutorial services to students who struggle academically. The Transitional Program offers coordinated, short-term support for students returning to school after extended absences. The high school developed the Workplace Alternative Program as an intervention for students needing a non-traditional educational program. Programming in conjunction with Germaine Lawrence, Inc. and the Arlington Youth Counseling Collaborative extend the targeted services available to students. Because AHS provides a wide range of educational support services, the vast majority of students are able to progress academically toward meeting the school's 21<sup>st</sup> century learning expectations. (Endicott survey, students, teacher interviews)

AHS provides information to families, especially to those most in need, about available student support services. Seventy-five percent of parents who responded to the Endicott survey reported that AHS provided information about student support services. Staff members, including guidance counselors, nurse, homeless liaison, school resource officer, social workers, special education staff, and general education teachers communicate with families in many ways. They provide information in person and in print and web-based formats including the AHS website, Arlington Public Schools Physical and Mental Health Resource Booklet, and information nights for parents and guardians. As a result, families receive the information needed to support their children academically, socially, and emotionally. (Endicott survey, teacher interviews, self-study)

The AHS support staff use technology in an effective manner to deliver a wide range of services. Students and parents make use of the online portal that is part of the PowerSchool data information system used by AHS. The portal allows monitoring of students' grades and attendance. Another use of technology is the web-based Naviance college and

career platform that guidance counselors use for managing the college application process for students, who begin accessing the suite of programs

starting in grade 9 to establish a clear path to post-secondary education. Also, the guidance department sends a monthly electronic newsletter to families, informing them about upcoming guidance and school-wide events as well as reminding the community about the resources and support provided by the guidance department. The school nurse currently uses SNAP Health Center software to maintain electronic health records. The nurse uses this information to communicate with parents, and when appropriate, staff. Because support services staff use technology for information management, services are coordinated so students are able to progress academically toward meeting the school's 21<sup>st</sup> century learning expectations, (school board, teacher interviews, students)

Arlington High School's counseling services have an adequate number of certified/licensed personnel and support staff. AHS has five guidance counselors, one school-wide social worker/intervention specialist, and three additional social workers who work specifically with students with disabilities who have individualized education programs requiring direct services or consults. The guidance department has published a written developmental curriculum for all four grades. Guidance counselors are available to meet with grade 9 and 10 students at least twice per year to discuss scheduling, course levels, and academic planning. They meet with grade 11 and 12 students individually and in small groups on a more frequent basis for college counseling and other post-secondary planning. Each student has the option to make an appointment to meet with their guidance counselor during the student's free time. Results from the Endicott survey reveal that 66 percent of students feels comfortable going to the guidance counselor. Personnel have also created relationships with community agencies that respond to student needs. Results from formal evaluations, norm-referenced testing, and qualitative screenings are examples of assessment data used to enhance services AHS provides. Because of the depth and breadth of counseling services and the holistic approach to student well-being, AHS students across the school have access to appropriate services that support them working toward achieving 21<sup>st</sup> century learning expectations. (Endicott survey, parents, self-study)

Arlington High School's health services have an adequate number of certified personnel who provide preventative health services for students at Arlington High School. AHS has one full-time nurse and the district's nursing supervisor is housed in the AHS health office. The nurse provides both preventative and direct intervention services, uses an appropriate referral process, conducts ongoing student health assessments, and collects relevant assessment data that allows AHS to assess which services are needed for students to meet the school's 21<sup>st</sup> century learning expectations. The nurse reviews students' physical exam reports and immunization records, and she is notified when a student is involved in a concussion incident. As a result of the collection and analysis of many health-related data points, the nurse makes decisions on health bulletins and other information sent to parents or posted on the nurse's website. At the beginning of every academic year, the nurse instructs staff on universal precautions, life-

threatening allergies, and other pertinent health issues. Due to the adequate amount of nursing personnel, the school is able to provide the safe environment necessary for all students to work toward achieving 21st century learning expectations, (central office personnel, students, Endicott survey)

By design, library services are an integral part of the Arlington High School learning community. The school has a full-time librarian again after the position was cut due to budget constraints during the 2010-2011 school year. The librarian spends most of her time developing and implementing the School Library Media Program while the remainder is spent working on media and technology for the district. The librarian is actively engaged in the implementation of the school's curriculum, and provides a wide range of materials, technology, and other information services in support of the school curriculum. The librarian attends department head meetings led by the assistant superintendent in order to be aware of departmental issues and topics throughout the district. Participating in these meetings allows the librarian to plan acquisitions based on department needs. In collaborating with teachers, the librarian ensures that available resources reinforce the school's curriculum. The library provides a wide range of materials, technologies and other information services in support of the school's curriculum. The library is open Monday through Thursday from 7:45 AM to 4:00 PM.; on Friday it closes at 3:00 PM. These hours include times before and after classes to increase access for students. The library accommodates class groups on a flexible schedule. The librarian tracks usage of the school's databases and uses the information to make decisions about future subscriptions. She also weeds the collection to ensure that materials are current and support the curriculum. Because the librarian is involved in curriculum implementation through collaboration, materials acquisition, and technology use, AHS students are able to work toward meeting the 21<sup>st</sup> century learning expectations, (self-study, teachers, central office personnel)

For most identified students, AHS has an adequate number of staff, who collaborates with colleagues, provides inclusive learning opportunities for all students, and performs ongoing assessment using relevant data. The school has 24 licensed personnel and teaching assistants providing a wide range of programs and services. All AHS students have inclusive learning opportunities in general education classes and co-curricular activities. Special education staff is implementing the Social Thinking curriculum by Michelle Garcia Winner in order to increase the social pragmatic skills of students with an Autism Spectrum Disorder. AHS uses Scantron® Performance Series® Web-Based Diagnostics in

math and language arts to assess student progress with literacy skills. However, AHS is unable to obtain relevant data for ELL students due to the scarcity of assessment materials in students' native languages. AHS does have a Spanish-language version of the Weschler Intelligence Scale for Children (WISC), yet does not currently have a licensed staff member with the language proficiency to administer it. With the discontinuation of MELA-O and MEPA assessments, the ELL program will administer ACCESS for ELL students. All counselors, special education teachers,

and academic support teachers communicate face-to-face, via email, or through personal electronic device applications with students' general education teachers and related staff. The level of collaboration, use of data, and fostering of inclusion experiences support most AHS students working toward meeting the 21<sup>st</sup> century learning expectations, (panel presentation, teacher interviews, self-study)

## **Commendations**

The comprehensive array of academic, social, and emotional support programs and services available to assist students in meeting 21<sup>st</sup> century expectations

The variety of methods used to ensure that families, especially those most in need, are provide with information about student support services

The use of technology to deliver a wide-range of student support services

The guidance department provides comprehensive student support information on the AHS website AHS has developed and published a Guidance Department Curriculum Guide

The school nurses who use a website, appropriate referrals, and membership on school-based teams to provide preventative health and directive intervention services to students

The collaboration among support staff, special educators, and general educators across the school

The connections fostered by AHS with community social service and health agencies

The active role of the librarian in supporting the curriculum

## **Recommendations**

Assure the availability of language appropriate materials for assessing and placing ELL students

Ensure that appropriate licensed staff member are available to administer assessments to students with ELL needs

Support Standard



## **Community Resources for Learning**

*The achievement of the school's 21<sup>st</sup> century learning expectations requires active community, governing board, and parent advocacy. Through dependable and adequate funding, the community provides the personnel, resources, and facilities to support the delivery of curriculum, instruction, programs, and services.*

The community and the district's governing body provide dependable funding for:

- a wide range of school programs and services
- sufficient professional and support staff
- ongoing professional development and curriculum revision
- a full range of technology support
- sufficient equipment
- sufficient instructional materials and supplies.

The school develops, plans, and funds programs:

- to ensure the maintenance and repair of the building and school plant
- to properly maintain, catalogue, and replace equipment
- to keep the school clean on a daily basis.

The community funds and the school implements a long-range plan that addresses:

- programs and services
- enrollment changes and staffing needs
- facility needs
- technology
- capital improvements.

Faculty and building administrators are actively involved in the development and implementation of the budget.

The school site and plant support the delivery of high quality school programs and services.

The school maintains documentation that the physical plant and facilities meet all applicable federal and state laws and are in compliance with local fire, health, and safety regulations.

All professional staff actively engage parents and families as partners in each student's education and reach out specifically to those families who have been less connected with the school.

8. The school develops productive parent, community, business, and higher education partnerships that support student learning.

The community and the district's governing body has worked hard to provide funding for ongoing professional development and curriculum revision, professional and support staff, and many of the school programs and services. Budget increases have been consumed by the rising costs of health care and out-of-district placement costs resulting in cuts to professional staff. According to the Endicott Survey, only 10 percent of parents indicated that the community provide dependable funding for programs and services. In response, the budget has been supplemented by grants and community donations. The FY12 school committee budget, supplemented by a one million dollar override, provides adequate funding to support the programs, staffing, professional development, and curriculum revisions of the school. Most teachers report that they have adequate supplies and materials for instruction. Equipment in some classes is outdated and in need of replacement. The loss of the 3<sup>rd</sup> house dean has placed additional strain on the administrative team. Technology funds are not fully allocated in the budget; instead some funds are provided as they are available through cost savings in other budget areas and through grants. Teachers and students report a significant number of

students involved in co-curricular activities despite having user fees for participation. The funding provided by the community and the district's governing body for ongoing professional development and curriculum revision, professional and support staff, and many of the school programs and services although often coming from grants and fundraising allow students to work toward achieving the learning expectations set forward by the school community (school committee, self-study, teachers)

Arlington High School does not sufficiently plan or adequately fund programs to ensure maintenance and repair of the building and school plant, to properly maintain, catalogue, and replace equipment, and to keep the school clean on a daily basis. The school building shows significant signs of wear and a general need for greater maintenance of essential facilities. Bathrooms have a general lack of cleanliness and do not all have functioning soap dispensers, working faucets, and stalls. Many lockers are rusted and broken and locker rooms have peeling paint. There is one classroom that is closed to students due to environmental concerns. During the visit ceiling tiles were seen falling in the building. Funding for repairs is limited to critical incidents, with additional projects being addressed through budget savings in other areas. The school has a Director of Facilities and Maintenance who oversees a custodial manager and a maintenance manager. There are 5 maintenance workers and 12 custodians who deal with all aspects of the facility. Despite the number of on-duty custodians building and cleaning requirements are not being met. Some hallways and many classrooms are dusty and vents in

many areas have visible signs of dust and lint in them. Basic classroom equipment such as faucets, desks, tables, and lab supplies are worn, broken, or not up to current standards of use. The Technology Plan does not show a cycle for replacement of equipment in order to maintain an adequate level of service. Acceptable levels of cleanliness and repair must be provided to ensure that the building allows students to meet the learning expectations, (school support staff, facility tour, self-study)

The community adequately funds some programs and services and plans for enrollment changes and staffing needs, however, funding for long range technology planning and capital improvement is limited. Funding for technology purchases come from town and school funds, as well as from grants and Arlington Education Foundation (AEF) funds. Community support through the budget override and fundraising has allowed the school to meet current enrollment and staffing needs. Special education funding has increased over the past year and more out-of-district placements have been brought back into the school. While the high school has a technology plan for technology acquisition, much of the funding for current purchases comes from AEF and grants. Installation of a wireless network at school was made possible through cost savings in the budget. The community has not funded nor created a plan to address deficiencies in the facility. Once the school and community plans for and provided funds to support long-range planning of programs and services, enrollment changes and staffing needs, facility needs, technology, and capital



improvements students will be better prepared for 21<sup>st</sup> century learning, (self-study, central office personnel, school committee)

In some areas, faculty and building administrators are involved in the development and implementation of the budget. Some teachers report being part of the budget process through their department chair, while some report that they are not consulted on budgeting needs and, therefore, look to outside funding for educational opportunities and supplies. Inequity in funding exists in departments that do not have strong advocates for funding or departmental leadership that pursues grant opportunities. Programs such as ELL, special education, and English report the need for additional supplies and materials not included in budget discussions. Building administrators, as part of the Leadership Team, are involved with budget development and revisions. The Parent Advisory Council participates in decisions about budget cuts and revisions. Funding inequities exist among departments and therefore some students do not have access to materials in all classes necessary for them to meet the 21<sup>st</sup> century learning expectations, (teachers, self-study, school support staff).

Arlington High School is a complex of three buildings. The space for programs and services is crowded and show signs of age, wear, and inadequate maintenance. There is insufficient classroom and lab space to support the curriculum. Quality instruction is being delivered by teachers in spite of the impediments of a crowded and deteriorating building. Although students and teachers have pride in the programs at AHS, the advanced age of the building shows significant signs of wear and tear. Science labs are not sufficient in size or design for some classes that have larger enrollments. Columns and posts in rooms obstruct student vision and movement. Media center renovations have created a space for student collaboration and the use of technology and the facility is used extensively before, during and after school. The school has significant gym and workout space with a variety of programs available. Classrooms are insufficient in number and size especially in science and art classrooms, where class size exceeds the number of available stations in some classrooms. Students are able to achieve educational goals and objectives in spite of a facility with significant needs, (faciUty tour, classroom observations, teachers).

The school does not fully maintain documentation that the physical plant and facilities meet all applicable federal and state laws and are not in full compliance with local fire, health, and safety regulations. Deficiencies in science laboratory safety, handicap entrance and egress, and fire drill procedures exist as a part of the physical plant. Science laboratories either have no or limited access to eyewash stations/ showers or eyewash stations/ showers that have no documentation of inspection. Gas shutoffs are not located within each room and safety equipment such as fire blankets is missing. Handicap entrance and egress is inadequate for the building, and facilities such as the auditorium and "the pit" are not up to current ADA requirements. Postings of fire drill procedures are not evident in every classroom or

common spaces such as cafeteria, media center, and the "old hall." Student and staff safety and security is compromised which affects students' ability to achieve the school's learning expectations, (facility tour, classroom observations, teachers).

The professional staff engages parents and families as partners in each student's education and in some areas, reaching out specifically to those families who have been less connected with the school. Arlington High School provides a personalized education experience to parents and families. The faculty and staff inform parents and families through orientation days, guidance nights, back-to-school nights, and parent conferences. Families of students who are deemed at-risk of not meeting the school's academic or social expectations are invited to individual meetings with the school deans and/or guidance counselors. The school uses a range of technology to communicate with parents and families electronically. The website has practical and important information for all aspects of school including health and safety information, academic departments, athletics, and guidance. The school

principal writes regular emails to the parents about school activities and the guidance office also sends out regular communications about issues related to guidance, the college admissions process, mental health support, and other important topics. PowerSchool, the school's student information system (SIS), provides a student and parent portal to allow families to see student academic progress and attendance. The METCO coordinator holds monthly meetings in Boston for parents of those students who are bussed from Boston neighborhoods to AHS, to keep those families informed. Critical documents, such as report cards and important information, are not translated into multiple languages as needed. Most families have adequate contact with the school community, yet populations of students without regular access to technology or with language barriers still have limited opportunities to communicate with professional staff which impacts their ability to achieve 21<sup>st</sup> century learning expectations, (self-study, teachers, school support staff).

The school develops parent and community partnerships, however, business and higher education partnerships are limited. Arlington High School has supportive families and an at-large community that has helped deal with difficult funding situations. Funding to support programming, personnel, and supplies necessary to implement 21<sup>st</sup> century curriculum and instruction, have come through community fundraising, outside grants, and income generating programs. Budget overrides were passed by the town's citizens, resulting in a balanced FY12 budget, increased staffing, and decreased athletic fees. Although opportunities for the school to develop partnerships with local businesses and higher educational institutions exist they are limited. The school has student-teaching partnerships with Boston College, Brandeis University, and Framingham State College. On-line courses are available to students from Framingham State College and dual enrollment courses are available from the Harvard Extension School and Middlesex Community College. A partnership with MIT/Lincoln Labs allowed the school to create a robotics team.

Student learning is enhanced by the financial contributions of community organizations, however greater business and higher-education partnerships will enhance learning opportunities for students, (parents, school committee, self-study).

### **Commendations**

The community which raises funds to support programs and services

The pride exhibited by students and the community in the high school and its programs despite the age and condition of the building

The media center renovation which provides students with the opportunity to achieve 21<sup>st</sup> century learning objectives

The efforts of school staff to actively engage parents and families as partners in each student's education

### **Recommendation**

Develop and implement a long-range plan, with a timeline for completion and a source of funding, to completely address school facility needs

Address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards

Addressed all health and safety issues including science labs, egress plans for evacuation, and handicap accessibility

Develop a budget that provides dependable revenue without reliance on grants and fundraising to consistently support programs

Develop funding plans for long-range planning, technology, and capital improvements

Develop and implement a plan to improve the overall cleanliness of the facility

Increase partnerships with area colleges to provide students with additional opportunities

Ensure that the families of all students are receiving report cards and other school communications regardless of Internet access and/or language barriers

Ensure that all teachers and building administrators are part of the budget development process

Ensure equitable distribution of school resources to support learning

### **FOLLOW-UP RESPONSIBILITIES**

This comprehensive evaluation report reflects the findings of the school's self-study and those of the visiting committee. It provides a blueprint for the faculty, administration, and other officials to use to improve the quality of programs and services for the students in Arlington High School. The faculty, school board, and superintendent should be apprised by the building administration yearly of progress made addressing visiting committee recommendations.

Since it is in the best interest of the students that the citizens of the district become aware of the strengths and limitations of the school and suggested recommendations for improvement, the Committee requires that the evaluation report be made public in accordance with the Committee's Policy on Distribution, Use, and Scope of the Visiting Committee Report.

A school's continued accreditation is based on satisfactory progress implementing valid recommendations of the visiting committee and others identified by the Committee as it monitors the school's progress and changes which occur at the school throughout the decennial cycle. To monitor the school's progress in the Follow-Up Program the Committee requires that the principal of Arlington High School submit routine Two- and Five-Year Progress Reports documenting the current status of all evaluation report recommendations, with particular detail provided for any recommendation which may have been rejected or those items on which no action has been taken. In addition, responses must be detailed on all recommendations highlighted by the Committee in its notification letters to the school. School officials are expected to have completed or be in the final stages of completion of all valid visiting committee recommendations by the time the Five-Year Progress Report is submitted. The Committee may request additional Special Progress Reports if one or more of the Standards are not being met in a satisfactory manner or if additional information is needed on matters relating to evaluation report recommendations or substantive changes in the school.

To ensure that it has current information about the school, the Committee has an established Policy on Substantive Change requiring that principals of member schools report to the Committee within sixty days (60) of occurrence any substantive change which negatively impacts on the school's adherence to the Committee's Standards for Accreditation. The report of substantive change must describe the change itself and detail any impact which the change has had on the school's ability to meet the Standards for Accreditation. The Committee's Substantive Change Policy is included in the

Appendix on page 62. All other substantive changes should be included in the Two- and Five-Year Progress Reports and/or the Annual Report which is required of each member school to ensure that the Committee office has current statistical data on the school.

The Committee urges school officials to establish a formal follow-up program at once to review and implement all findings of the self-study and valid recommendations identified in the evaluation report. An outline of the Follow-Up Program is available in the Committee's *Accreditation Handbook* which was given to the school at the onset of the self-study. Additional direction regarding suggested procedures and reporting requirements is provided at Follow-Up Seminars offered by Committee staff following the on-site visit.

The committee would like to thank the people of Arlington, the school district, and the staff and students at AHS for their hospitality during the visit.

#### **APPENDIX A**

### **Arlington High School NEASC Accreditation Visit December 2<sup>nd</sup> to 5<sup>th</sup> 2012**

#### **Visiting Committee**

Chair  
Timothy J. Sullivan Jr.  
Capital Region Education Council  
Hartford, CT 06106

Assistant Chair  
Ira Brown  
New England Association of Schools and Colleges  
Norton, MA 02766

Carolann Tebbetts  
Milford High School  
Milford, MA, 01757

Ryan Beattie  
Scituate High School  
Scituate, MA 02066

Paul De Palo  
Shrewsbury High School  
Shrewsbury, MA 01545

Marguerite Ferrer  
Milford High School  
Milford, NH 03055

Jonathan Bennett  
Harwich High School  
Harwich, MA 02645

Mary Jane Quinlan  
Beverly High School  
Beverly, MA 01915

Lori Solazzo  
Newburyport High School  
Newburyport, MA 01950

Joan Holt  
Oliver Ames High School  
North Easton, MA 02356

Susan Densmore  
Triton Regional High School  
Byfield, MA 01922

Steven Dellinger-Pate  
Pathways to Technology & Design  
Windsor, CT 06095

Brian Regan  
Hudson High School  
Hudson, MA 01749

Jeff Gallo  
Danvers High School  
Danvers, MA 01923

Stephen Gould  
Shepard Hill Regional High School  
Dudley, MA 01571

Elizabeth Dawes  
Marblehead High School  
Marblehead, MA 01945

#### **APPENDIX B**

## NEW ENGLAND ASSOCIATION OF SCHOOLS & COLLEGES

### Committee on Public Secondary Schools

#### SUBSTANTIVE CHANGE POLICY

Principals of member schools must report to the Committee within sixty (60) days of occurrence any substantive change in the school which has a *negative impact* on the school's ability to meet any of the Committee's Standards for Accreditation. The report of a substantive change must describe the change itself as well as detail the impact on the school's ability to meet the Standards. The following are potential areas where there might be negative substantive changes which must be reported:

elimination of fine arts, practical arts and student activities

diminished upkeep and maintenance of facilities

significantly decreased funding

cuts in the level of administrative and supervisory staffing

cuts in the number of teachers and/or guidance counselors

grade level responsibilities of the principal

cuts in the number of support staff

decreases in student services

cuts in the educational media staffing

increases in student enrollment that cannot be accommodated

takeover by the state

inordinate user fees

changes in the student population that warrant program or staffing modification(s) that cannot be accommodated, e.g., the number of special needs students or vocational students or students with limited English proficiency

## LIST OF COMMENDATIONS and RECOMMENDATIONS

### Commendations

#### Core Values, Beliefs, and 21<sup>st</sup> Century Learning Expectations

The identification of a set of core values (ICARE) that are embodied by the vast majority

of students and staff and that positively impacts the culture of the school

The dynamic, collaborative and inclusive process by which the school identified and

committed to its core values, beliefs and academic expectations

The evidence of curricular changes as a result of the core values, beliefs and

learning expectations

The plan to regularly review and update the 21<sup>st</sup> century learning expectations with the input of

multiple stakeholders

The faculty reading of *Good to Great* by Jim Collins to frame conversations about the

direction of the school, and the district-wide read in 2006 of *Vie World is Flat* by Thomas

Friedman

The extent to which the core values, beliefs about learning, and 21<sup>st</sup> century learning

expectations are embedded into the culture of the school

### Curriculum

The AHS staff is committed to providing high quality curriculum to all students

The work of most academic departments to create a common curriculum format via Atlas

Rubicon software

Teachers incorporate technology in their curriculum and emphasize informed/ethical use

of technology



AHS provides multiple authentic learning opportunities through community service, Senior Capstone Project, physical education courses such as Survival and Wilderness Camping, and the onsite day care program

Academic departments are working toward creating common assessments to validate the alignment of written and taught curriculum

6. The focus on depth of understanding and application of knowledge

## **Instruction**

The use of evaluations by administrators to ensure that instructional practices are consistent with the school's core values, beliefs, and 21<sup>st</sup> century learning expectations

The variety of strategies used by teachers to personalize instruction

The faculty's commitment to high quality instruction that focuses on inquiry, problem-solving, and higher-order thinking

The engagement of students as active and self-directed learners through a variety of researched-based instructional techniques

The implementation of the Learning Center to support student learning

The teachers who maximize the use of available technology to enhance student learning

The use of assessments data results to inform instructional practices

## **Assessment of and for Student Learning**

The wide variety of assessment strategies, including formative and summative assessments, in order to revise and improve curriculum and instruction used by teachers

The specific, timely, and corrective feedback given by teachers to ensure students revise and improve their work

The practice of providing rubrics to students prior to each summative assessment

The common course assessments developed by several departments during professional meeting time

The pervasive use formative assessments by teachers to inform and adapt instruction

The communication of the applicable school-wide learning expectations to students prior to each unit of study

## **School Culture and Leadership**

The existence of a positive school culture, which makes AHS a safe and welcoming place for students and staff

The impressive array of extra-curricular clubs and organizations, funded by the district, available to the student population

The exceptional demeanor and deportment of students in the school indicating a respectful and supportive school culture

The strong communication and collaboration between the school committee, superintendent, and principal

The principal's instructional leadership and advocacy for the school's core values and beliefs about learning and the programs that support them

The dedication by administrators to research-based supervision and evaluation that is focused on the improvement of teaching and learning

The hiring of new faculty members that has resulted in more manageable classes sizes

The AHS faculty's initiative in creating a number of one-time or short-term events that foster student involvement, such as after-school activities, international exchange programs, and community service opportunities that fosters student involvement

The lack of barriers to general student enrollment in core and elective courses

The school developing advisory program which ensures that all students have at least one adult in the school, in addition to the school counselor, who knows the student well, and assists the student in achieving the school's 21<sup>st</sup> century learning expectations

The leadership and initiative demonstrated by teachers essential to the improvement of the school

## **School Resources for Learning**

The comprehensive array of academic, social, and emotional support programs and services available to assist students in meeting 21<sup>st</sup> century expectations

The variety of methods used to ensure that families, especially those most in need, are provided with information about student support services

The use of technology to deliver a wide-range of student support services

The guidance department provides comprehensive student support information on the AHS website AHS has developed and published a Guidance Department Curriculum Guide

The school nurses who use a website, appropriate referrals, and membership on school-based teams to provide preventative health and directive intervention services to students

The collaboration among support staff, special educators, and general educators across the school

The connections fostered by AHS with community social service and health agencies

The active role of the librarian in supporting the curriculum

### **Community Resources for Learning**

The community which raises funds to support programs and services

The pride exhibited by students and the community in the high school and its programs despite the age and condition of the building

The media center renovation which provides students with the opportunity to achieve 21<sup>st</sup> century learning objectives

The efforts of school staff to actively engage parents and families as partners in each student's education

## **Recommendations**

### **Core Values, Beliefs, and 21<sup>st</sup> Century Learning Expectations**

Develop school-wide analytic rubrics for each of the seven school-wide expectations

Implement the plan to regularly review and update the core values, beliefs, and learning expectations

Ensure that the school-wide rubrics measuring the 21<sup>st</sup> century learning expectations is being used across all disciplines by all teachers

### **Curriculum**

Establish additional time for the collaborative and ongoing work necessary to maintain 21<sup>st</sup> century standards in curriculum

Develop strategies for creating more interdisciplinary and cross-curricular communication and course work in the curriculum

Include instructional strategies and assessment practices in curriculum maps

Ensure that the facility adequately supports the implementation of the curriculum

Complete the common curriculum template

#### Instruction

Provide opportunities for all teachers to engage in peer review and to share best practices with teachers throughout the school community

Ensure all teachers have equitable access to modern technology and appropriate training to enhance instructional practices

Increase opportunities for students to participate in interdisciplinary learning

Increase formal opportunities for teachers of common classes to analyze student work to inform instruction

Increase opportunities for teachers to review data in order to enhance student learning and improve instruction

#### Assessment of and for Student Learning

Provide sufficient formal time for teachers to collaborate in the creation, analysis, and revision of formative and summative assessments

Develop and implement a formal process, based on school-wide rubrics, to assess whole-school and individual students progress in achieving the school's 21<sup>st</sup> century learning expectations

Develop and implement a mechanism to communicate individual and whole-school progress on the school's 21<sup>st</sup> century learning expectations to all stakeholders

Formalize and implement school-wide the process of collecting, disaggregating, and analyzing data to identify and respond to potential inequities in student achievement

Ensure that grading and reporting practices are regularly reviewed to ensure alignment with the school's core values and beliefs about learning

#### School Culture and Leadership

Ensure that research-based instructional strategies and teacher collaboration are supported by the school schedule

Ensure that every student over the course of their high school experience is enrolled in a minimum of one heterogeneously grouped core class (English/language arts, social studies, math, science, or world language)

- Involve teachers in the identification of professional development focused on the improvement of student learning and success
- Ensure that the school's **21st** century learning expectations are an integral part of the advisory program agendas
- Develop and implement a plan to address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards
- Implement strategies to ensure that students, teachers, and parents take advantage of opportunities to participate in the decision-making process

### **School Resources for Learning**

- Assure the availability of language appropriate materials for assessing and placing ELL students
- Ensure that appropriate licensed staff member are available to administer assessments to students with ELL needs

### **Community Resources for Learning**

- Develop and implement a long-range plan, with a timeline for completion and a source of funding, to completely address school facility needs
- Address overcrowding in classroom settings in which the use of lab and studio equipment presents potential safety hazards
- Addressed all health and safety issues including science labs, egress plans for evacuation, and handicap accessibility
- Develop a budget that provides dependable revenue without reliance on grants and fundraising to consistently support programs
- Develop funding plans for long-range planning, technology, and capital improvements
- Develop and implement a plan to improve the overall cleanliness of the facility
- Increase partnerships with area colleges to provide students with additional opportunities
- Ensure that the families of all students are receiving report cards and other school communications regardless of Internet access and/or language barriers
- Ensure that all teachers and building administrators are part of the budget development process
- Ensure equitable distribution of school resources to support learning



## **Town of Arlington, Massachusetts**

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### **8:20 p.m. Consent Agenda**

#### **Summary:**

- Approval of Warrant #15122 dated March 12, 2015 in the amount of \$643,068.73.
- Approval of minutes: Regular School Committee meeting March 12, 2015 and the 2nd Public Hearing on FY 16 Budget Meeting minutes, March 12, 2015.

#### **ATTACHMENTS:**

Type	Description
☐ Warrant	Warrant 3 12 2015
☐ Minutes	draft minutes 3 12 2015 for approval
☐ Minutes	Draft minutes 3/12/2015 Public Hearing




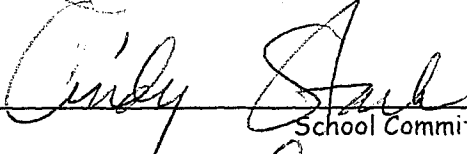
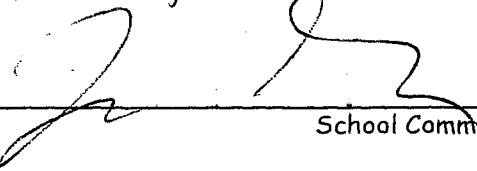
# APPROVAL OF ACCOUNTS PAYABLE

SC

I / We certify that there is due to the vendors named within this Accounts Payable Warrant the amount set against their respective names, in payment for services performed to date.

Warrant Number	15122	Total Warrant Amount	\$643,068.73
Dated	3/12/15		

## STATEMENT MADE UNDER THE PENALTIES OF PERJURY

	3/12/15
Superintendent of Schools / Chief Financial Officer	
	3/12/15
School Committee	
	3/12/15
School Committee	
	3/12/15
School Committee	
	3-12-15
School Committee	

# APPROVAL OF ACCOUNTS PAYABLE

SC

I / We certify that there is due to the vendors named within this Accounts Payable Warrant the amount set against their respective names, in payment for services performed to date.

Warrant Number

15122

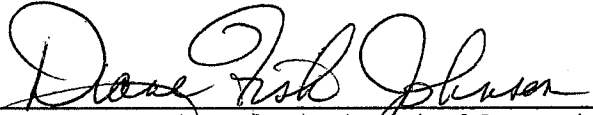
Total Warrant Amount

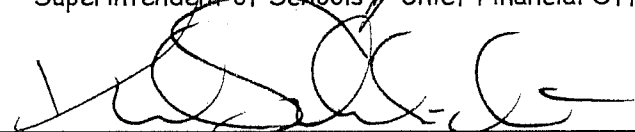
\$643,068.73

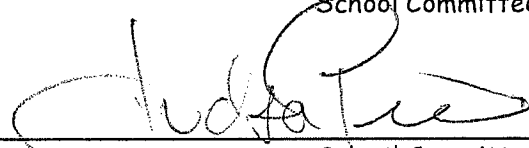
Dated

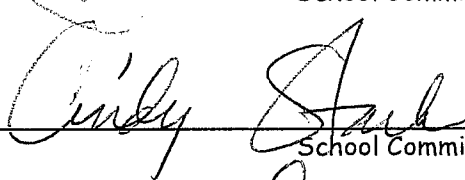
3/12/15

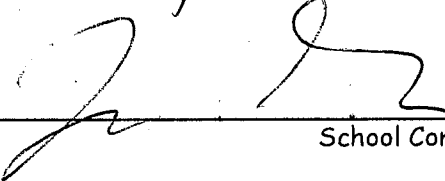
STATEMENT MADE UNDER THE PENALTIES OF PERJURY

 3/12/15  
Superintendent of Schools / Chief Financial Officer

 3/12/15  
School Committee

 3/12/15  
School Committee

 3/12/15  
School Committee

 3-12-15  
School Committee



PRELIMINARY

TOWN OF ARLINGTON

SC

DATE: 03/12/2015      WARRANT: 15122      AMOUNT: \$ 643,068.73

PAY TO EACH OF THE PERSONS NAMED IN THE ATTACHED WARRANT THE  
SUMS SET AGAINST THEIR RESPECTIVE NAMES, AMOUNTING IN THE  
AGGREGATE, AND CHARGE THE SAME TO APPROPRIATIONS OR ACCOUNTS  
INDICATED.

TOWN MANAGER

\_\_\_\_\_

COMPTROLLER

\_\_\_\_\_

\_\_\_\_\_

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
27747	A PLUS TRANSPORTAION, 1 02816990 83301 3300	00000	7649615	INV	03/12/2015	REVISED 11-2014 3,257.50 3,257.50 Invoice Net	206065		
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27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574983 210.00 210.00 Invoice Net	204876		
27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574961 210.00 210.00 Invoice Net	205192		
27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574984 210.00 210.00 Invoice Net	205193		
27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574985 231.00 231.00 Invoice Net	205194		
27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574987 231.00 231.00 Invoice Net	206029		
27354	A TO Z FOODS 1 03034309 835001	00000	596515	INV	03/12/2015	574986 210.00 210.00 Invoice Net	206030		
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24592	ACLC 1 1322015 83101 2440	00000	10797115	INV	03/12/2015	1012-AM 2,313.00 2,313.00 Invoice Net	206141		
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70227	AHS GENERAL FUND 1 02016557 84201 2430	00000	10911715	INV	03/12/2015	REIMB GEN'L FUND 20.99 20.99 Invoice Net	206140		
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30857	ALTERNATIVE TRANSPORTA 1 02816980 83301 3300	00000	7658115	INV	03/12/2015	0115-AS 225.00 225.00 Invoice Net	205981		
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13371	AMSAN 1 02756965 82904 4110	00002	528815	INV	03/12/2015	331204339 725.26 725.26 Invoice Net	206226		
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28819	ANDERSON, MEG 1 14115101 83101 2357	00000	10860815	INV	03/12/2015	2/1-2/28/15 1,600.00 1,600.00 Invoice Net	205340		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

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	1 143 7289			ATHLETIC F	MISC REV	700.00			
				Invoice Net		700.00			
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28022	ANDRINA'S	00000	596215	INV	03/12/2015	166991	206028		
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	1 02456821 83101 2320			SPED/CLINI	PROF TECH	590.00			
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29770	ARISE CONSULTING SERVI	00000	7633415	INV	03/12/2015	CONSULT-MV-FEB'15	205983		
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	1 02456821 83101 2320			SPED/CLINI	PROF TECH	120.00			
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	1 02756960 82411 4220			FAC MAINT	WINDOW	1,441.60			
				Invoice Net		1,441.60			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
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70266	ASCD 1 02126575 87301	2357	00003 10928515	INV	03/12/2015	MEMBER#1811197 89.00 89.00 Invoice Net	206139		
70266	ASCD 1 02516730 87301	2357	00003 10942115	INV	03/12/2015	11938243 89.00 89.00 C&I WORLD PROF AFFLI Invoice Net	206383		
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70324	BAKER & TAYLOR 1 02016563 85106	2410	00002 10780815	INV	03/12/2015	5013509312 46.21 46.21 LIBRARY/ME TEXTBOOKS Invoice Net	206307		
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24583	BAYSTATE INTERPRETERS, 1 02456857 83101	2330	00000 7632615	INV	03/12/2015	290087 120.00 120.00 SPED CONTR PROF TECH Invoice Net	205809		
						CHECK TOTAL	120.00		-----
29685	BEACON ABA SERVICES, I 1 02456857 83101	2330	00000 7632715	INV	03/12/2015	I017473 284.00 284.00 SPED CONTR PROF TECH Invoice Net	206067		
						CHECK TOTAL	284.00		-----
15609	BEACON HIGH SCHOOL 1 02456848 83201	9300	00000 7634215	INV	03/12/2015	032650 4,610.57 4,610.57 Tuition DY TUITION Invoice Net	205812		
15609	BEACON HIGH SCHOOL 1 02456848 83201	9300	00000 7639615	INV	03/12/2015	032697 4,610.57 4,610.57 Tuition DY TUITION Invoice Net	205814		
						CHECK TOTAL	9,221.14		-----
11649	BELMONT HILL SCHOOL 1 02026626 83804	3510	00000 10949515	INV	03/12/2015	805-1 940.00 940.00 ATHL/HOCKE ATHLETIC Invoice Net	206147		
						CHECK TOTAL	940.00		-----
70412	BELMONT AND CRYSTAL SP 1 02606910 85806	1210	00001 580015	INV	03/12/2015	1249889 030115 28.90 28.90 SUPER MISC SUPPL Invoice Net	206143		
						CHECK TOTAL	28.90		-----
70412	BELMONT AND CRYSTAL SP 1 1952 84000		00001 600415	INV	03/12/2015	1035734 021815 11.56 11.56 TRANSCRIPT MISC RECEI Invoice Net	206144		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	11.56		-----
70412	BELMONT AND CRYSTAL SP 1 02756960 84201 4220	00001	585915	INV 03/12/2015 FAC MAINT OFFICE Invoice Net		1040804 030115 11.56 11.56	206229		
						CHECK TOTAL	11.56		-----
29355	BELZ, EMILY 1 1336770 81112 6200	00000	10943915	INV 03/12/2015 ADULT ED INSTRUCT Invoice Net		#BEYOND AUTO SETTING 300.00 300.00	206148		
						CHECK TOTAL	300.00		-----
29256	BOLT, DAN 1 02026622 83804 3510	00000		INV 03/12/2015 ATHL/BASKB ATHLETIC Invoice Net		3681 56.00 56.00	205941		
						CHECK TOTAL	56.00		-----
22234	THE BOOK RACK 1 02296581 85106 2410	00000	10730915	INV 03/12/2015 READING IN TEXTBOOKS Invoice Net		603 2,310.00 2,310.00	206308		
22234	THE BOOK RACK 1 02306740 85106 2410	00000	10836415	INV 03/12/2015 C&I ENGLIS TEXTBOOKS Invoice Net		604 2,250.50 2,250.50	206309		
22234	THE BOOK RACK 1 02216506 85106 2410	00000	10915315	INV 03/12/2015 ELEM EDUC TEXTBOOKS Invoice Net		605 139.30 139.30	206381		
						CHECK TOTAL	4,699.80		-----
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11798 466.80 466.80	205988		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11799 312.88 312.88	205989		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11800 200.00 200.00	205990		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11801 250.00 250.00	205991		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11838 312.60 312.60	206068		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11839 206.72 206.72	206069		
23615	BOSTON ABA, INC. 1 02456821 83101 2320	00000	7632915	INV 03/12/2015 SPED/CLINI PROF TECH Invoice Net		11840 150.00 150.00	206070		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	1,899.00		-----
70500	BOSTON COLLEGE CAMPUS	00000	7635015	INV	03/12/2015	2/1/15-2/28/15-JC	205815		
	1 02456848 83201 9300			TUITION DY	TUITION	4,195.51			
				Invoice Net		4,195.51			
						CHECK TOTAL	4,195.51		-----
18495	BOSTON HIGASHI SCHOOL	00000	7634715	INV	03/12/2015	1502412	205819		
	1 02456851 83201 9300			OOD RESIDE	TUITION	16,125.76			
				Invoice Net		16,125.76			
18495	BOSTON HIGASHI SCHOOL	00000	7635615	INV	03/12/2015	1502403	205821		
	1 02456848 83201 9300			TUITION DY	TUITION	6,260.88			
				Invoice Net		6,260.88			
						CHECK TOTAL	22,386.64		-----
28425	BOTOS, DEBORAH	00000	10541815	INV	03/12/2015	APS0215-05	206145		
	1 02606910 83101 1210			SUPER	PROF TECH	1,035.00			
				Invoice Net		1,035.00			
						CHECK TOTAL	1,035.00		-----
30067	BOUDREAU, SEAN	00000		INV	03/12/2015	3668	206085		
	1 02026640 83804 3510			ATH/G/I.H.	ATHLETIC	90.00			
				Invoice Net		90.00			
						CHECK TOTAL	90.00		-----
26952	BOURASSA, JUSTIN	00000		INV	03/12/2015	5531	206087		
	1 02026622 83804 3510			ATHL/BASKB	ATHLETIC	50.00			
				Invoice Net		50.00			
						CHECK TOTAL	50.00		-----
70525	CYNTHIA BOUVIER	00000	621615	INV	03/12/2015	REIMB POSTERS	206146		
	1 02366710 84201 2430			C&I HEALTH	OFFICE	105.44			
				Invoice Net		105.44			
						CHECK TOTAL	105.44		-----
25591	BOWERS, VIRGINIA AUTUM	00000	7629215	INV	03/12/2015	2/23-2/27/15	205824		
	1 02456803 83101 2310			SPED/TUTOR	PROF TECH	550.00			
	2 02456857 83101 2310			SPED CONTR	PROF TECH	825.00			
				Invoice Net		1,375.00			
25591	BOWERS, VIRGINIA AUTUM	00000	7629215	INV	03/12/2015	3/3-3/7/15	206071		
	1 02456803 83101 2310			SPED/TUTOR	PROF TECH	725.00			
	2 02456857 83101 2310			SPED CONTR	PROF TECH	500.00			
				Invoice Net		1,225.00			
						CHECK TOTAL	2,600.00		-----
30314	ROBERT KIBBE BROWN	00000	7631915	INV	03/12/2015	2/16-2/20/15	205993		
	1 02456857 83101 2310			SPED CONTR	PROF TECH	900.00			
				Invoice Net		900.00			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
30314	ROBERT KIBBE BROWN 1 02456857 83101	2310	00000 7631915	INV	03/12/2015	2/23-2/27/15 900.00 900.00 Invoice Net	205994		
						CHECK TOTAL	1,800.00		-----
75137	BRYANT, NATE 1 02026622 83804	3510	00000 ATHL/BASKB	INV	03/12/2015	7381 90.00 90.00 Invoice Net	205942		
						CHECK TOTAL	90.00		-----
70602	BSN SPORTS INC 1 02026645 85104	3510	00001 10934815	INV	03/12/2015	96720974 1,089.72 1,089.72 Invoice Net	206149		
						CHECK TOTAL	1,089.72		-----
70426	BUREAU OF EDUCATION & 1 02456575 87202	2357	00000 7655815	INV	03/12/2015	4583605 235.00 235.00 Invoice Net	206072		
						CHECK TOTAL	235.00		-----
28897	BURNS, BOB 1 02026622 83804	3510	00000 ATHL/BASKB	INV	03/12/2015	3684 56.00 56.00 Invoice Net	205943		
						CHECK TOTAL	56.00		-----
70657	C & W TRANSPORTATION, 1 02816970 84802	3300	00000 7645715	INV	03/12/2015	C+W-1503001 115.00 115.00 Invoice Net	205827		
70657	C & W TRANSPORTATION, 1 02126506 83302	2440	00000 10928115	INV	03/12/2015	12237 250.00 250.00 Invoice Net	206310		
						CHECK TOTAL	365.00		-----
71020	C.A.S.E. COLLABORATIVE 1 02456848 83201	9400	00000 7642715	INV	03/12/2015	150171 8,242.77 8,242.77 Invoice Net	205831		
71020	C.A.S.E. COLLABORATIVE 1 02456848 83201	9400	00000 7656115	INV	03/12/2015	150324 2,169.15 2,169.15 Invoice Net	205995		
						CHECK TOTAL	10,411.92		-----
30997	CALLAHAN, SUSAN 1 1336770 81112	6200	00000 10903815	INV	03/12/2015	#INCREDIBLE COOKIES 154.00 154.00 Invoice Net	206152		
						CHECK TOTAL	154.00		-----
70693	CAM OFFICE SERVICES, I 1 02016507 85101	2430	00000 10912015	INV	03/12/2015	87490 719.66 719.66 Invoice Net	205345		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
70693	CAM OFFICE SERVICES, I	00000	625915	INV	03/12/2015	87756	206311		
	1 02666920 85101 1410		BUS OFFICE	REPRO SUPP		380.64			
			Invoice Net			380.64			
70693	CAM OFFICE SERVICES, I	00000	10949315	INV	03/12/2015	87757	206312		
	1 02016507 85101 2430		SEC EDUC	REPRO SUPP		91.21			
			Invoice Net			91.21			
			CHECK TOTAL			1,191.51			-----
27121	CAROUSEL STUDENT TOURS	00000	10925215	INV	03/12/2015	5240	205344		
	1 02636575 87202 2357		PROF DEV	TRAINING		380.00			
			Invoice Net			380.00			
			CHECK TOTAL			380.00			-----
31129	ARLINGTON CHAMBER OF C	00000	10903215	INV	03/12/2015	697	206142		
	1 1336765 87301 6200		GEN ADMIN	DUES MEMBE		50.00			
			Invoice Net			50.00			
			CHECK TOTAL			50.00			-----
17209	THE CHILDREN'S ROOM	00000	10861115	INV	03/12/2015	TRAIN@THOMPSON 1/29	205343		
	1 08192014 83101 2357		SUCCESS	PROF DEV		375.00			
			Invoice Net			375.00			
			CHECK TOTAL			375.00			-----
71834	THE CHILDREN'S HEALTH	00000	621515	INV	03/12/2015	30876-109	205347		
	1 08192015 85103 2415		SUCCESS	SUPPLIES		264.60			
			Invoice Net			264.60			
			CHECK TOTAL			264.60			-----
24820	CHILDREN'S SPEECH AND	00000	7632015	INV	03/12/2015	15744	205996		
	1 02456818 83101 2320		SPED/DEAF	PROF TECH		300.00			
			Invoice Net			300.00			
24820	CHILDREN'S SPEECH AND	00000	7632015	INV	03/12/2015	15745	205997		
	1 02456818 83101 2320		SPED/DEAF	PROF TECH		100.00			
			Invoice Net			100.00			
			CHECK TOTAL			400.00			-----
23761	CITY OF BOSTON -	00000	7658315	INV	03/12/2015	TUITION-BG	205992		
	1 02456848 83201 9100		TUITION DY	TUITION		4,517.62			
			Invoice Net			4,517.62			
			CHECK TOTAL			4,517.62			-----
70934	CLEARWAY SCHOOL	00000	7634815	INV	03/12/2015	2014-2015-699	205998		
	1 02456848 83201 9300		TUITION DY	TUITION		1,895.85			
			Invoice Net			1,895.85			
			CHECK TOTAL			1,895.85			-----
24670	CLINTON LIVERY, INC.	00000	7630415	INV	03/12/2015	FEB.2015-JD	205834		
	1 02816980 83301 3300		SPED/REIMB	TRANS		3,965.00			
			Invoice Net			3,965.00			



# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	3,965.00		-----
25897	COMBUSTION SERVICE COM	00000	586615	INV	03/12/2015	23441			
	1 02756960 82414 4220	FAC MAINT	BOILER C.S			240.00	206230		
		Invoice Net				240.00			
25897	COMBUSTION SERVICE COM	00000	586615	INV	03/12/2015	23440			
	1 02756960 82414 4220	FAC MAINT	BOILER C.S			301.00	206231		
		Invoice Net				301.00			
						CHECK TOTAL	541.00		-----
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3323355			
	1 03034309 835000	FOOD SERV	FOOD SERV/			662.00	204877		
		Invoice Net				662.00			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3323434			
	1 03034309 835000	FOOD SERV	FOOD SERV/			842.69	204878		
		Invoice Net				842.69			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3323376			
	1 03034309 835000	FOOD SERV	FOOD SERV/			1,103.69	204879		
		Invoice Net				1,103.69			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3324750			
	1 03034309 835000	FOOD SERV	FOOD SERV/			635.05	204880		
		Invoice Net				635.05			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3329786			
	1 03034309 835000	FOOD SERV	FOOD SERV/			576.53	205196		
		Invoice Net				576.53			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3329838			
	1 03034309 835000	FOOD SERV	FOOD SERV/			742.33	205197		
		Invoice Net				742.33			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3329705			
	1 03034309 835000	FOOD SERV	FOOD SERV/			1,197.64	205198		
		Invoice Net				1,197.64			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3330717			
	1 03034309 835000	FOOD SERV	FOOD SERV/			1,119.00	205199		
		Invoice Net				1,119.00			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3331433			
	1 03034309 835000	FOOD SERV	FOOD SERV/			966.66	205200		
		Invoice Net				966.66			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3331395			
	1 03034309 835000	FOOD SERV	FOOD SERV/			547.69	205201		
		Invoice Net				547.69			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3335983			
	1 03034309 835000	FOOD SERV	FOOD SERV/			1,174.32	206101		
		Invoice Net				1,174.32			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3332792			
	1 03034309 835000	FOOD SERV	FOOD SERV/			1,533.39	206102		
		Invoice Net				1,533.39			
71080	COSTA FRUIT & PRODUCE	00001	595515	INV	03/12/2015	3334342			
	1 03034309 835000	FOOD SERV	FOOD SERV/			630.31	206104		
		Invoice Net				630.31			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
71080	COSTA FRUIT & PRODUCE 1 03034309 835000		00001 595515	INV	03/12/2015	3334257 1,433.13 1,433.13 Invoice Net	206106		
71080	COSTA FRUIT & PRODUCE 1 03034309 835000		00001 595515	INV	03/12/2015	3336010 1,144.26 1,144.26 Invoice Net	206108		
				CHECK TOTAL		14,308.69			-----
71088	COTTING SCHOOL 1 02456848 83201	9300	00000 7638515	INV	03/12/2015	9341 7,711.53 7,711.53 Invoice Net	205838		
71088	COTTING SCHOOL 1 02456848 83201	9300	00000 7637215	INV	03/12/2015	9340 7,711.53 7,711.53 Invoice Net	205840		
				CHECK TOTAL		15,423.06			-----
26183	CROTCHED MOUNTAIN 1 02456845 83201 2 02456851 83201	9300 9300	00000 7634615	INV	03/12/2015	120096 9,967.01 21,795.79 31,762.80 Invoice Net	205844		
				CHECK TOTAL		31,762.80			-----
71176	D'AGOSTINO'S DELI 1 02606910 84902	1210	00000 10713415	INV	03/12/2015	4533 99.48 99.48 Invoice Net	206150		
				CHECK TOTAL		99.48			-----
29994	DEL MONTE, LINDA 1 1336770 81112	6200	00000 10944315	INV	03/12/2015	MORNING YOGA1/7-2/25 530.00 530.00 Invoice Net	206155		
				CHECK TOTAL		530.00			-----
71246	DEMCO, INC. 1 02016563 84201	2430	00001 10780915	INV	03/12/2015	5532691 100.70 100.70 Invoice Net	206313		
71246	DEMCO, INC. 1 02016563 84201	2430	00001 10780915	INV	03/12/2015	5531560 124.53 124.53 Invoice Net	206315		
				CHECK TOTAL		225.23			-----
31005	DESIGN RESOURCE CENTER 1 1336765 88501 2 18406507 85110	6200 2420	00000 10910315	INV	03/12/2015	1064 10,000.00 5,929.68 15,929.68 Invoice Net	206232		
				CHECK TOTAL		15,929.68			-----
30081	DLUGOLECKI, MELISSA 1 02026620 83804	3510	00000 10908215	INV	03/12/2015	REIMB MILEGE1/13-3/9 254.52 254.52 Invoice Net	206153		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
CHECK TOTAL						254.52			-----
30049	THE MATH FORUM @ DREXE	00000	10809715	INV	03/12/2015	ELEMCLASS(3-6)DEC'15	205348		
	1 02066506 85106 2410		ELEM EDUC	TEXTBOOKS		149.00			
			Invoice Net			149.00			
30049	THE MATH FORUM @ DREXE	00000	10850515	INV	03/12/2015	RENEWAL (3-6) DEC'15	205349		
	1 02096575 87301 2357		PROF DEV	BRACKETT		149.00			
			Invoice Net			149.00			
CHECK TOTAL						298.00			-----
26581	KENDALL DUDLEY	00000	10943715	INV	03/12/2015	WHO AM I NOW ?	206154		
	1 1336770 81112 6200		ADULT ED	INSTRUCT		135.00			
			Invoice Net			135.00			
CHECK TOTAL						135.00			-----
29365	DUGGAN MECHANICAL SERV	00000	586415	INV	03/12/2015	05712	206233		
	1 02756960 82412 4220		FAC MAINT	HVAC		270.00			
			Invoice Net			270.00			
29365	DUGGAN MECHANICAL SERV	00000	586415	INV	03/12/2015	05715	206234		
	1 02756960 82412 4220		FAC MAINT	HVAC		202.50			
			Invoice Net			202.50			
29365	DUGGAN MECHANICAL SERV	00000	586415	INV	03/12/2015	05717	206235		
	1 02756960 82412 4220		FAC MAINT	HVAC		1,687.50			
			Invoice Net			1,687.50			
CHECK TOTAL						2,160.00			-----
30868	DYMEK, JOHANNA	00000	7648915	INV	03/12/2015	REIM MILEGE-FEB'15	205999		
	1 02456821 81201 2320		SPED/CLINI	TEMP PROF		23.69			
			Invoice Net			23.69			
CHECK TOTAL						23.69			-----
71410	EDCO	00000	7647515	INV	03/12/2015	1150762	205847		
	1 02456848 83201 9400		TUITION DY	TUITION		4,720.65			
			Invoice Net			4,720.65			
71410	EDCO	00000	7647615	INV	03/12/2015	1150757	205851		
	1 02456848 83201 9400		TUITION DY	TUITION		4,720.65			
			Invoice Net			4,720.65			
71410	EDCO	00000	7647715	INV	03/12/2015	1150749	206000		
	1 02456848 83201 9400		TUITION DY	TUITION		3,846.30			
			Invoice Net			3,846.30			
CHECK TOTAL						13,287.60			-----
22844	CENGAGE LEARNING INC.	00000	10839015	INV	03/12/2015	1151099	205350		
	1 1336770 81112 6200		ADULT ED	INSTRUCT		11.25			
			Invoice Net			11.25			
22844	CENGAGE LEARNING INC.	00000	10839015	INV	03/12/2015	1149390	205351		
	1 1336770 81112 6200		ADULT ED	INSTRUCT		325.00			
			Invoice Net			325.00			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

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POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	336.25		-----
17253	EDUCATION, INC.		00000 7633015	INV	03/12/2015	253510		205854	
	1 02456803 83101 2310		SPED/TUTOR	PROF TECH		150.00			
			Invoice Net			150.00			
						CHECK TOTAL	150.00		-----
30429	CHELSEA EKENSEAIR		00000 10903415	INV	03/12/2015	SOUPS & STEWS1/22/15	206159		
	1 1336770 81112 6200		ADULT ED	INSTRUCT		150.00			
			Invoice Net			150.00			
						CHECK TOTAL	150.00		-----
27560	ELY CENTER		00000 7651115	INV	03/12/2015	8206	206073		
	1 02456818 83101 2320		SPED/DEAF	PROF TECH		1,020.00			
			Invoice Net			1,020.00			
						CHECK TOTAL	1,020.00		-----
30028	EMBROID ME WALTHAM/PHO		00000 30028	INV	03/12/2015	20693	206158		
	1 02026620 85104 3510		ATHLE/ADMI	ATHL SUPPL		149.97			
			Invoice Net			149.97			
						CHECK TOTAL	149.97		-----
71489	ENVIRO-SAFE ENGINEERIN		00000 563515	INV	03/12/2015	12768	206236		
	1 02016960 83802 4220		MAINT SUPP	ENVIRONMEN		160.00			
			Invoice Net			160.00			
						CHECK TOTAL	160.00		-----
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y60992	204881		
	1 03034309 835001		FOOD SERV	FOOD SERVI		79.24			
			Invoice Net			79.24			
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y60993	204882		
	1 03034309 835001		FOOD SERV	FOOD SERVI		124.41			
			Invoice Net			124.41			
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y63268	205202		
	1 03034309 835001		FOOD SERV	FOOD SERVI		98.26			
			Invoice Net			98.26			
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y63269	206031		
	1 03034309 835001		FOOD SERV	FOOD SERVI		84.82			
			Invoice Net			84.82			
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y65916	206032		
	1 03034309 835001		FOOD SERV	FOOD SERVI		96.58			
			Invoice Net			96.58			
21724	FANTINI BAKING CO., IN		00000 597615	INV	03/12/2015	Y65917	206033		
	1 03034309 835001		FOOD SERV	FOOD SERVI		105.83			
			Invoice Net			105.83			
						CHECK TOTAL	589.14		-----
23827	FARAH ENTERPRISES, INC		00000 595315	INV	03/12/2015	473348	204883		

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 03034309 835001			FOOD SERV	FOOD SERVI	360.00			
				Invoice Net		360.00			
23827 FARAH ENTERPRISES, INC	00000 595315	INV	03/12/2015			473349	205203		
	1 03034309 835001			FOOD SERV	FOOD SERVI	240.00			
				Invoice Net		240.00			
23827 FARAH ENTERPRISES, INC	00000 595315	INV	03/12/2015			473350	205204		
	1 03034309 835001			FOOD SERV	FOOD SERVI	360.00			
				Invoice Net		360.00			
23827 FARAH ENTERPRISES, INC	00000 595315	INV	03/12/2015			001001	206034		
	1 03034309 835001			FOOD SERV	FOOD SERVI	240.00			
				Invoice Net		240.00			
23827 FARAH ENTERPRISES, INC	00000 595315	INV	03/12/2015			001002	206035		
	1 03034309 835001			FOOD SERV	FOOD SERVI	360.00			
				Invoice Net		360.00			
				CHECK TOTAL		1,560.00			-----
12894 FARR ACADEMY	00000 7641215	INV	03/12/2015			IVC0004426	206001		
	1 02456848 83201 9300			TUITION DY	TUITION	6,102.45			
				Invoice Net		6,102.45			
				CHECK TOTAL		6,102.45			-----
30300 FOLLETT SCHOOL SOLUTIO	00001 10890415	INV	03/12/2015			598516F-2	206161		
	1 169 85106 2410			BILL'S BKS	TEXTBOOKS	495.68			
				Invoice Net		495.68			
				CHECK TOTAL		495.68			-----
31119 FOSTER,CHRISTINA	00000	INV	03/12/2015			REFUND ATHLETICS	206164		
	1 143 7289			ATHLETIC F	MISC REV	100.00			
				Invoice Net		100.00			
				CHECK TOTAL		100.00			-----
28786 FUNK, SUSAN	00000 10944415	INV	03/12/2015			DRAWING 1/5-2/23/15	206162		
	1 1336770 81112 6200			ADULT ED	INSTRUCT	300.00			
				Invoice Net		300.00			
				CHECK TOTAL		300.00			-----
19607 G/J TOWING, INC.	00000 7657815	INV	03/12/2015			35205	206075		
	1 02816970 84802 3300			TRANS ED	VEHICLE RE	375.00			
				Invoice Net		375.00			
				CHECK TOTAL		375.00			-----
74516 GARELICK FARMS OF LYNN	00001 596115	INV	03/12/2015			1/31/15-AHS	204884		
	1 03034309 835001			FOOD SERV	FOOD SERVI	185.14			
				Invoice Net		185.14			
74516 GARELICK FARMS OF LYNN	00001 596115	INV	03/12/2015			1/31/15-BISHOP	204885		
	1 03034309 835001			FOOD SERV	FOOD SERVI	80.74			
				Invoice Net		80.74			
74516 GARELICK FARMS OF LYNN	00001 596115	INV	03/12/2015			1/31/15-BRACKETT	204886		

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 03034309 835001			FOOD SERV	FOOD SERVI	91.70			
				Invoice Net		91.70			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-DALLIN	204887		
	1 03034309 835001			FOOD SERV	FOOD SERVI	80.92			
				Invoice Net		80.92			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-HARDY	204888		
	1 03034309 835001			FOOD SERV	FOOD SERVI	26.20			
				Invoice Net		26.20			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-OMS	204889		
	1 03034309 835001			FOOD SERV	FOOD SERVI	98.95			
				Invoice Net		98.95			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-PIERCE	204890		
	1 03034309 835001			FOOD SERV	FOOD SERVI	65.15			
				Invoice Net		65.15			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-STRATTON	204891		
	1 03034309 835001			FOOD SERV	FOOD SERVI	91.35			
				Invoice Net		91.35			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	1/31/15-THOMPSON	204892		
	1 03034309 835001			FOOD SERV	FOOD SERVI	96.32			
				Invoice Net		96.32			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-AHS	204893		
	1 03034309 835001			FOOD SERV	FOOD SERVI	506.43			
				Invoice Net		506.43			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-BISHOP	204894		
	1 03034309 835001			FOOD SERV	FOOD SERVI	135.64			
				Invoice Net		135.64			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-BRACKETT	204895		
	1 03034309 835001			FOOD SERV	FOOD SERVI	168.55			
				Invoice Net		168.55			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-DALLIN	204896		
	1 03034309 835001			FOOD SERV	FOOD SERVI	162.00			
				Invoice Net		162.00			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-HARDY	204897		
	1 03034309 835001			FOOD SERV	FOOD SERVI	182.53			
				Invoice Net		182.53			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-OMS	204898		
	1 03034309 835001			FOOD SERV	FOOD SERVI	326.99			
				Invoice Net		326.99			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-PIERCE	204899		
	1 03034309 835001			FOOD SERV	FOOD SERVI	54.89			
				Invoice Net		54.89			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-STRATTON	204900		
	1 03034309 835001			FOOD SERV	FOOD SERVI	138.11			
				Invoice Net		138.11			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/07/15-THOMPSON	204901		
	1 03034309 835001			FOOD SERV	FOOD SERVI	250.30			
				Invoice Net		250.30			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-AHS	204902		

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	1 03034309 835001			FOOD SERV	FOOD SERVI	199.61			
				Invoice Net		199.61			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-BISHOP	204903		
	1 03034309 835001			FOOD SERV	FOOD SERVI	93.84			
				Invoice Net		93.84			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-BRACKETT	204904		
	1 03034309 835001			FOOD SERV	FOOD SERVI	91.53			
				Invoice Net		91.53			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-DALLIN	204905		
	1 03034309 835001			FOOD SERV	FOOD SERVI	71.54			
				Invoice Net		71.54			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-HARDY	204906		
	1 03034309 835001			FOOD SERV	FOOD SERVI	39.13			
				Invoice Net		39.13			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-OMS	204907		
	1 03034309 835001			FOOD SERV	FOOD SERVI	150.30			
				Invoice Net		150.30			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-PIERCE	204908		
	1 03034309 835001			FOOD SERV	FOOD SERVI	39.13			
				Invoice Net		39.13			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-STRATTON	204909		
	1 03034309 835001			FOOD SERV	FOOD SERVI	45.51			
				Invoice Net		45.51			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/14/15-THOMPSON	204910		
	1 03034309 835001			FOOD SERV	FOOD SERVI	91.35			
				Invoice Net		91.35			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-AHS	205220		
	1 03034309 835001			FOOD SERV	FOOD SERVI	364.03			
				Invoice Net		364.03			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-BISHOP	205223		
	1 03034309 835001			FOOD SERV	FOOD SERVI	93.84			
				Invoice Net		93.84			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-BRACKETT	205225		
	1 03034309 835001			FOOD SERV	FOOD SERVI	93.84			
				Invoice Net		93.84			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-DALLIN	205227		
	1 03034309 835001			FOOD SERV	FOOD SERVI	90.68			
				Invoice Net		90.68			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-HARDY	205229		
	1 03034309 835001			FOOD SERV	FOOD SERVI	93.84			
				Invoice Net		93.84			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-OMS	205232		
	1 03034309 835001			FOOD SERV	FOOD SERVI	214.95			
				Invoice Net		214.95			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-PIERCE	205234		
	1 03034309 835001			FOOD SERV	FOOD SERVI	67.64			
				Invoice Net		67.64			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-STRATTON	205237		

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 03034309 835001			FOOD SERV	FOOD SERVI	80.74			
				Invoice Net		80.74			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/21/15-THOMPSON	205239		
	1 03034309 835001			FOOD SERV	FOOD SERVI	132.62			
				Invoice Net		132.62			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-AHS	206036		
	1 03034309 835001			FOOD SERV	FOOD SERVI	503.98			
				Invoice Net		503.98			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-BISHOP	206037		
	1 03034309 835001			FOOD SERV	FOOD SERVI	146.25			
				Invoice Net		146.25			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-BRACKETT	206038		
	1 03034309 835001			FOOD SERV	FOOD SERVI	146.42			
				Invoice Net		146.42			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-DALLIN	206039		
	1 03034309 835001			FOOD SERV	FOOD SERVI	156.86			
				Invoice Net		156.86			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-HARDY	206040		
	1 03034309 835001			FOOD SERV	FOOD SERVI	91.53			
				Invoice Net		91.53			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-OMS	206041		
	1 03034309 835001			FOOD SERV	FOOD SERVI	359.21			
				Invoice Net		359.21			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-PIERCE	206042		
	1 03034309 835001			FOOD SERV	FOOD SERVI	78.43			
				Invoice Net		78.43			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-STRATTON	206043		
	1 03034309 835001			FOOD SERV	FOOD SERVI	163.96			
				Invoice Net		163.96			
74516	GARELICK FARMS OF LYNN	00001	596115	INV	03/12/2015	2/28/15-THOMPSON	206044		
	1 03034309 835001			FOOD SERV	FOOD SERVI	195.48			
				Invoice Net		195.48			
				CHECK TOTAL		6,638.15			-----
71736	GIFFORD SCH + DAY CTR	00000	7636515	INV	03/12/2015	13988	205857		
	1 02456848 83201 9400			TUITION DY	TUITION	4,855.20			
				Invoice Net		4,855.20			
71736	GIFFORD SCH + DAY CTR	00000	7637615	INV	03/12/2015	14112	205859		
	1 02456848 83201 9300			TUITION DY	TUITION	4,855.20			
				Invoice Net		4,855.20			
				CHECK TOTAL		9,710.40			-----
19313	GLAZER, BRUCE	00000		INV	03/12/2015	3650	204926		
	1 02026635 83804 3510			ATH/G/BB	ATHLETIC	90.00			
				Invoice Net		90.00			
				CHECK TOTAL		90.00			-----
71823	GRAINGER	00001	577815	INV	03/12/2015	9678634131	206237		



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	1 02756960 84308	4220	FAC MAINT	ELECTRICAL		2,225.46			
			Invoice Net			2,225.46			
71823	GRAINGER		00001 10912215	INV	03/12/2015	9665953676	206238		
	1 02016518 84321	2420	FAM/CONS S	EQUIP MAIN		97.70			
			Invoice Net			97.70			
			CHECK TOTAL			2,323.16			-----
30461	GREEN, KIMBER		00000 10903515	INV	03/12/2015	MEDITATIONJAN+FEB'15	206166		
	1 1336770 81112	6200	ADULT ED	INSTRUCT		440.00			
			Invoice Net			440.00			
			CHECK TOTAL			440.00			-----
28323	GRIFFIN, TOM		00000	INV	03/12/2015		206264		
	1 02026640 83804	3510	ATH/G/I.H.	ATHLETIC		8805			
			Invoice Net			56.00			
			CHECK TOTAL			56.00			-----
20209	HALLORAN, PAUL JR.		00000	INV	03/12/2015		205944		
	1 02026622 83804	3510	ATHL/BASKB	ATHLETIC		7382			
			Invoice Net			90.00			
			CHECK TOTAL			90.00			-----
31124	HANSEN, ADAM		00000 109040	INV	03/12/2015		206167		
	1 1336765 83402	6200	GEN ADMIN	COMMUNICAT		558			
			Invoice Net			2,625.00			
			CHECK TOTAL			2,625.00			-----
31125	HARRELSON, BROOKS		00000 10903315	INV	03/12/2015	PLAY CHESS 1/8-1/29	206173		
	1 1336770 81112	6200	ADULT ED	INSTRUCT		100.00			
			Invoice Net			100.00			
			CHECK TOTAL			100.00			-----
71983	HEALTH RESOURCES		00001 7645615	INV	03/12/2015		206076		
	1 02816970 83101	3300	TRANS ED	PROF TECH		333997			
			Invoice Net			35.20			
			CHECK TOTAL			35.20			-----
31126	HEERMANCE, SHARON		00000 10944515	INV	03/12/2015	POETRY MARY OLIVER	206316		
	1 1336770 81112	6200	ADULT ED	INSTRUCT		50.00			
			Invoice Net			50.00			
			CHECK TOTAL			50.00			-----
27872	HIGH SCHOOL GYMNASTICS		00002 10935715	INV	03/12/2015	ENTRIES-STATE INDIVI	206165		
	1 02026639 83804	3510	ATH/G/GYM	ATHLETIC		40.00			
			Invoice Net			40.00			
			CHECK TOTAL			40.00			-----
29544	HROBAK, AMY		00000 2954415	INV	03/12/2015	REIMB 4 BOOKS	206168		

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	1 08192014 85103	2415	SUCCESS	INSTRUCT		31.50			
			Invoice Net			31.50			
						CHECK TOTAL	31.50		-----
30797 HUEBNER, JOY	1 02456812 83101	2320	00000 7646615	INV 03/12/2015		2	206003		
			SPED/PT	PROF TECH		225.00			
			Invoice Net			225.00			
						CHECK TOTAL	225.00		-----
22404 WESTON SKI TRACK	1 1336770 81112	6200	00001 10944215	INV 03/12/2015		183778	206151		
			ADULT ED	INSTRUCT		236.00			
			Invoice Net			236.00			
						CHECK TOTAL	236.00		-----
27084 JOHN C. STALKER INSTIT	1 03034309 835002		00000 597415	INV 03/12/2015		1616-JSI	204911		
			FOOD SERV	FOOD SERV/		299.00			
			Invoice Net			299.00			
						CHECK TOTAL	299.00		-----
24159 JOHN ANTHONY GROUP	1 1336770 81112	6200	00000 10903615	INV 03/12/2015		QUICKBOOKS 2/11/15	206176		
			ADULT ED	INSTRUCT		50.00			
			Invoice Net			50.00			
						CHECK TOTAL	50.00		-----
23162 JULIANO, GEORGE JR.	1 02026622 83804	3510	00000	INV 03/12/2015		5543	206088		
			ATHL/BASKB	ATHLETIC		56.00			
			Invoice Net			56.00			
						CHECK TOTAL	56.00		-----
19317 JUSTICE RESOURCE INSTI	1 02456848 83201	9300	00000 7635215	INV 03/12/2015		12450715ARL-AC	205862		
			TUITION DY	TUITION		4,104.31			
			Invoice Net			4,104.31			
19317 JUSTICE RESOURCE INSTI	1 02456848 83201	9300	00000 7635415	INV 03/12/2015		124504715ARL-JC	205863		
			TUITION DY	TUITION		4,104.31			
			Invoice Net			4,104.31			
19317 JUSTICE RESOURCE INSTI	1 02456848 83201	9300	00000 7639115	INV 03/12/2015		12450715ARL-DS	205866		
			TUITION DY	TUITION		4,104.31			
			Invoice Net			4,104.31			
19317 JUSTICE RESOURCE INSTI	1 02456851 83201	9300	00000 7639415	INV 03/12/2015		12350715ARL-ES	205868		
			OOD RESIDE	TUITION		6,412.04			
			Invoice Net			6,412.04			
						CHECK TOTAL	18,724.97		-----
30998 KANAVOS, PAM	1 1336770 81112	6200	00000 10903915	INV 03/12/2015		GREEKNIGHT&CHOC TRUF	206179		
			ADULT ED	INSTRUCT		287.50			
			Invoice Net			287.50			
						CHECK TOTAL	287.50		-----

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WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
27771 KAUFMANN, JULIE	1 1336770 81112 6200	00000	10903715	INV	03/12/2015	SWING DANCE X 2	206180		
			ADULT ED	INSTRUCT		675.00			
			Invoice Net			675.00			
						CHECK TOTAL	675.00		-----
24475 KFOURY, TARA	1 02516730 87301 2357	00000	10942315	INV	03/12/2015	REIMB AATSP MEMBRSH	206178		
			C&I WORLD	PROF AFFLI		65.00			
			Invoice Net			65.00			
						CHECK TOTAL	65.00		-----
11424 KYLE, BARBARA A.	1 02456821 81201 2320	00000	7652215	INV	03/12/2015	REIM MILEGE-FEB'15	206077		
			SPED/CLINI	TEMP PROF		12.65			
			Invoice Net			12.65			
						CHECK TOTAL	12.65		-----
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642015	INV	03/12/2015	2152029	205914		
			TUITION DY	TUITION		4,201.55			
			Invoice Net			4,201.55			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642115	INV	03/12/2015	2152306	205915		
			TUITION DY	TUITION		4,739.77			
			Invoice Net			4,739.77			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642215	INV	03/12/2015	2152031	205916		
			TUITION DY	TUITION		4,201.55			
			Invoice Net			4,201.55			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642315	INV	03/12/2015	2152030	205917		
			TUITION DY	TUITION		4,739.77			
			Invoice Net			4,739.77			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642415	INV	03/12/2015	2152032	205918		
			TUITION DY	TUITION		4,201.55			
			Invoice Net			4,201.55			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642515	INV	03/12/2015	2152224	205919		
			TUITION DY	TUITION		4,406.06			
			Invoice Net			4,406.06			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7642815	INV	03/12/2015	2152033	205920		
			TUITION DY	TUITION		4,739.77			
			Invoice Net			4,739.77			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7643015	INV	03/12/2015	2152225	205921		
			TUITION DY	TUITION		4,406.06			
			Invoice Net			4,406.06			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7643215	INV	03/12/2015	2152035	205922		
			TUITION DY	TUITION		4,201.55			
			Invoice Net			4,201.55			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7643315	INV	03/12/2015	2152036	205923		
			TUITION DY	TUITION		4,201.55			
			Invoice Net			4,201.55			
72363 LABBB COLLABORATIVE	1 02456848 83201 9400	00000	7643415	INV	03/12/2015	2152037	205924		
			TUITION DY	TUITION		4,739.77			
			Invoice Net			4,739.77			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000

1010

POOLED CASH

WARRANT: 15122

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
72363	LABBB COLLABORATIVE	00000	7643515	INV	03/12/2015	2152038	205925		
	1 02456848 83201 9400			TUITION DY	TUITION	4,201.55			
				Invoice Net		4,201.55			
72363	LABBB COLLABORATIVE	00000	7643615	INV	03/12/2015	2152039	205926		
	1 02456848 83201 9400			TUITION DY	TUITION	4,739.77			
				Invoice Net		4,739.77			
72363	LABBB COLLABORATIVE	00000	7643715	INV	03/12/2015	2152226	205927		
	1 02456848 83201 9400			TUITION DY	TUITION	4,406.06			
				Invoice Net		4,406.06			
72363	LABBB COLLABORATIVE	00000	7643915	INV	03/12/2015	2152314	205928		
	1 02456848 83201 9400			TUITION DY	TUITION	3,502.85			
				Invoice Net		3,502.85			
72363	LABBB COLLABORATIVE	00000	7644115	INV	03/12/2015	2152227	205929		
	1 02456848 83201 9400			TUITION DY	TUITION	4,406.06			
				Invoice Net		4,406.06			
72363	LABBB COLLABORATIVE	00000	7644215	INV	03/12/2015	2152040	205930		
	1 02456848 83201 9400			TUITION DY	TUITION	4,201.55			
				Invoice Net		4,201.55			
72363	LABBB COLLABORATIVE	00000	7644315	INV	03/12/2015	2152041	205931		
	1 02456848 83201 9400			TUITION DY	TUITION	4,739.77			
				Invoice Net		4,739.77			
72363	LABBB COLLABORATIVE	00000	7644415	INV	03/12/2015	2152228	205932		
	1 02456848 83201 9400			TUITION DY	TUITION	4,406.06			
				Invoice Net		4,406.06			
72363	LABBB COLLABORATIVE	00000	7644515	INV	03/12/2015	2152042	205933		
	1 02456848 83201 9400			TUITION DY	TUITION	4,739.77			
				Invoice Net		4,739.77			
72363	LABBB COLLABORATIVE	00000	7644615	INV	03/12/2015	2152229	205934		
	1 02456848 83201 9400			TUITION DY	TUITION	4,406.06			
				Invoice Net		4,406.06			
72363	LABBB COLLABORATIVE	00000	7644715	INV	03/12/2015	2152313	205935		
	1 02456848 83201 9400			TUITION DY	TUITION	3,502.85			
				Invoice Net		3,502.85			
72363	LABBB COLLABORATIVE	00000	7644815	INV	03/12/2015	2152262	205936		
	1 02456848 83201 9400			TUITION DY	TUITION	4,406.06			
				Invoice Net		4,406.06			
72363	LABBB COLLABORATIVE	00000	7644915	INV	03/12/2015	2152043	205937		
	1 02456848 83201 9300			TUITION DY	TUITION	4,201.55			
				Invoice Net		4,201.55			
72363	LABBB COLLABORATIVE	00000	7645015	INV	03/12/2015	2152044	205938		
	1 02456848 83201 9400			TUITION DY	TUITION	4,201.55			
				Invoice Net		4,201.55			
72363	LABBB COLLABORATIVE	00000	7652615	INV	03/12/2015	2152329	205939		
	1 02456848 83201 9400			TUITION DY	TUITION	4,739.77			
				Invoice Net		4,739.77			
72363	LABBB COLLABORATIVE	00000	7692915	INV	03/12/2015	2152034	205940		
	1 02456848 83201 9400			TUITION DY	TUITION	4,201.55			
				Invoice Net		4,201.55			

# TOWN OF ARLINGTON



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CASH ACCOUNT: 0000 1010

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
72363	LABBB COLLABORATIVE	00000	7658415	INV	03/12/2015	2152371	206004		
	1 02816980 83301 3300		SPED/REIMB	TRANS		561.00			
			Invoice Net			561.00			
72363	LABBB COLLABORATIVE	00000	7631015	INV	03/12/2015	2152361	206078		
	1 02816980 83301 3300		SPED/REIMB	TRANS		714.00			
			Invoice Net			714.00			
72363	LABBB COLLABORATIVE	00000	7652515	INV	03/12/2015	2152368	206079		
	1 02816980 83301 3300		SPED/REIMB	TRANS		780.30			
			Invoice Net			780.30			
72363	LABBB COLLABORATIVE	00000	7655215	INV	03/12/2015	2152389	206080		
	1 02456818 83101 2320		SPED/DEAF	PROF TECH		65.00			
			Invoice Net			65.00			
			CHECK TOTAL			119,902.08			-----
72433	LEAGUE SCHOOL	00000	7640315	INV	03/12/2015	15-8107	205870		
	1 02456851 83201 9300		OOD RESIDE	TUITION		12,689.60			
			Invoice Net			12,689.60			
			CHECK TOTAL			12,689.60			-----
72436	THE LEARNING CENTER FO	00000	7636215	INV	03/12/2015	15535	206005		
	1 02456848 83201 9300		TUITION DY	TUITION		3,665.25			
			Invoice Net			3,665.25			
			CHECK TOTAL			3,665.25			-----
72441	LEARNING PREP SCHOOL I	00001	7634415	INV	03/12/2015	43397-AB	205872		
	1 02456848 83201 9300		TUITION DY	TUITION		2,500.00			
			Invoice Net			2,500.00			
72441	LEARNING PREP SCHOOL I	00001	7640015	INV	03/12/2015	43397-CW	205874		
	1 02456848 83201 9300		TUITION DY	TUITION		3,358.35			
			Invoice Net			3,358.35			
72441	LEARNING PREP SCHOOL I	00001	7640415	INV	03/12/2015	43397-NW	205877		
	1 02456848 83201 9300		TUITION DY	TUITION		3,024.19			
			Invoice Net			3,024.19			
			CHECK TOTAL			8,882.54			-----
26987	LEGO EDUCATION	00001	10897115	INV	03/12/2015	1190090760	205352		
	1 02426715 85103 2415		C&I SCIENC	INSTRUCT		254.65			
			Invoice Net			254.65			
			CHECK TOTAL			254.65			-----
72470	RICHARD LENNON	00000	10949615	INV	03/12/2015	SWIM ASSIGN FEE	206181		
	1 02026631 83804 3510		ATHL/SWIM	ATHLETIC		75.00			
			Invoice Net			75.00			
			CHECK TOTAL			75.00			-----
29843	NA LU-HOGAN	00000	10941915	INV	03/12/2015	REIMB QUIZLET SUBSCR	206171		
	1 02516730 85103 2415		C&I WORLD	INSTRUCT		25.00			
			Invoice Net			25.00			

# TOWN OF ARLINGTON



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POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	25.00		-----
70155 MAA/AMC						H151938	206382		
1 02396720 85102 2720			00002 10747715	INV 03/12/2015		1,031.00			
			C&I MATH TESTING			1,031.00			
			Invoice Net						
						CHECK TOTAL	1,031.00		-----
31001 MACINGENIUS LLC						MASTER YOUR IPAD	206224		
1 1336770 81112 6200			00000 10943815	INV 03/12/2015		75.00			
			ADULT ED INSTRUCT			75.00			
			Invoice Net						
						CHECK TOTAL	75.00		-----
28859 MAGLIOCCA, BRYAN						REIM MILEGE-FEB'15	206006		
1 02456839 87101 2315			00000 7648315	INV 03/12/2015		59.17			
			TEAM CHAIR BUS TRAVEL			59.17			
			Invoice Net						
						CHECK TOTAL	59.17		-----
24258 MAID-RITE STEAK COMPAN						28232953	206045		
1 03034309 835001			00000 597915	INV 03/12/2015		283.50			
			FOOD SERV FOOD SERVI			283.50			
			Invoice Net						
						CHECK TOTAL	283.50		-----
15547 MANSFIELD PAPER CO., I						88745	205205		
1 03034309 835000			00000 597015	INV 03/12/2015		1,491.49			
			FOOD SERV FOOD SERV/			1,491.49			
			Invoice Net						
15547 MANSFIELD PAPER CO., I						88747	205207		
1 03034309 835000			00000 597015	INV 03/12/2015		492.72			
			FOOD SERV FOOD SERV/			492.72			
			Invoice Net						
15547 MANSFIELD PAPER CO., I						93546	206046		
1 03034309 835000			00000 597015	INV 03/12/2015		620.26			
			FOOD SERV FOOD SERV/			620.26			
			Invoice Net						
15547 MANSFIELD PAPER CO., I						93545	206047		
1 03034309 835000			00000 597015	INV 03/12/2015		901.48			
			FOOD SERV FOOD SERV/			901.48			
			Invoice Net						
15547 MANSFIELD PAPER CO., I						93544	206048		
1 03034309 835000			00000 597015	INV 03/12/2015		1,080.95			
			FOOD SERV FOOD SERV/			1,080.95			
			Invoice Net						
						CHECK TOTAL	4,586.90		-----
29812 MARKET BASKET						ACCT#2597309-FEB'15	205353		
1 02036518 84902 2415			00000 10844115	INV 03/12/2015		98.00			
			FAM/CONS S FOOD SUPPL			98.00			
			Invoice Net						
29812 MARKET BASKET						ACCT#2001540-FEB'15	206185		
1 02016518 84902 2415			00000 10831315	INV 03/12/2015		401.31			
			FAM/CONS S FOOD SUPPL			401.31			
			Invoice Net						
						CHECK TOTAL	499.31		-----
72703 MASS CONTROL CENTER IN						0534647	206240		
			00000 630215	INV 03/12/2015					

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 02036960 84308	4220	MAINT ELEC	ELECTRICAL		685.16			
			Invoice Net			685.16			
						CHECK TOTAL	685.16		-----
27994 MASTASCUSA, MICHAEL	1 02026622 83804	3510	00000	INV 03/12/2015		5572	205945		
			ATHL/BASKB	ATHLETIC		56.00			
			Invoice Net			56.00			
						CHECK TOTAL	56.00		-----
27334 MAX'S TRUCKING	1 1336770 83408	6200	00000 10839215	INV 03/12/2015		429	205355		
			ADULT ED	DELIVERY		346.75			
			Invoice Net			346.75			
						CHECK TOTAL	346.75		-----
12897 THE MAY INSTITUTE INC.	1 02456851 83201	9300	00001 7638315	INV 03/12/2015		564495	206007		
			OOD RESIDE	TUITION		15,469.16			
			Invoice Net			15,469.16			
						CHECK TOTAL	15,469.16		-----
31135 MCDONNELL, KEVIN	1 02026640 83804	3510	00000	INV 03/12/2015		3666	206090		
			ATH/G/I.H.	ATHLETIC		90.00			
			Invoice Net			90.00			
						CHECK TOTAL	90.00		-----
30959 MARIO JIMENEZ	1 02816990 83301	3300	00000 7656815	INV 03/12/2015		3244	206008		
			TRANS HOM	TRANS		825.00			
			Invoice Net			825.00			
						CHECK TOTAL	825.00		-----
24340 MCKENZIE, KEVIN	1 02026635 83804	3510	00000	INV 03/12/2015		3673	204927		
			ATH/G/BB	ATHLETIC		45.00			
			Invoice Net			45.00			
24340 MCKENZIE, KEVIN	1 02026626 83804	3510	00000	INV 03/12/2015		3674	204928		
			ATHL/HOCKE	ATHLETIC		45.00			
			Invoice Net			45.00			
24340 MCKENZIE, KEVIN	1 02026640 83804	3510	00000	INV 03/12/2015		3667	205946		
			ATH/G/I.H.	ATHLETIC		65.00			
			Invoice Net			65.00			
24340 MCKENZIE, KEVIN	1 02026622 83804	3510	00000	INV 03/12/2015		8450	205947		
			ATHL/BASKB	ATHLETIC		45.00			
			Invoice Net			45.00			
24340 MCKENZIE, KEVIN	1 02026622 83804	3510	00000	INV 03/12/2015		3683	205948		
			ATHL/BASKB	ATHLETIC		45.00			
			Invoice Net			45.00			
24340 MCKENZIE, KEVIN	1 02026622 83804	3510	00000	INV 03/12/2015		3692	206265		
			ATHL/BASKB	ATHLETIC		55.00			
			Invoice Net			55.00			
						CHECK TOTAL	300.00		-----

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POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
22727 MILESTONES, INC.			00000 7636015	INV	03/12/2015	19845	205878		
1 02456848 83201	9300		TUITION DY TUITION			4,500.87			
			Invoice Net			4,500.87			
			CHECK TOTAL			4,500.87			-----
24367 MINERD, MERRIDITH			00000 10942015	INV	03/12/2015	REIMB MEMBER DUES	206183		
1 02516730 87301	2357		C&I WORLD PROF AFFLI			65.00			
			Invoice Net			65.00			
			CHECK TOTAL			65.00			-----
29663 MP BUILDING SERVICES			00000 586215	INV	03/12/2015	1445	206239		
1 02016965 82904	4110		CUSTODIAL CUSTODIAL			6,850.00			
2 02036965 82904	4110		CUSTODIAL CUSTODIAL			6,800.00			
			Invoice Net			13,650.00			
			CHECK TOTAL			13,650.00			-----
27873 MSLA			00000 10925115	INV	03/12/2015	2191	205354		
1 02636575 87202	2357		PROF DEV TRAINING			185.00			
			Invoice Net			185.00			
			CHECK TOTAL			185.00			-----
26268 MSTCA			00000 10949415	INV	03/12/2015	BAL.MEET 1/11/15	206184		
1 02026627 83804	3510		ATHL/TRACK ATHLETIC			65.00			
			Invoice Net			65.00			
			CHECK TOTAL			65.00			-----
30061 MVSA			00001 10732215	INV	03/12/2015	MEETING 3/10/15	206182		
1 02636575 87202	2357		PROF DEV TRAINING			21.00			
			Invoice Net			21.00			
			CHECK TOTAL			21.00			-----
11491 MYSTIC SERVICE, INC.			00000 7631315	INV	03/12/2015	SEEM-FEB'15	205883		
1 02816980 83301	3300		SPED/REIMB TRANS			1,375.00			
			Invoice Net			1,375.00			
			CHECK TOTAL			1,375.00			-----
73056 NAPA AUTO PARTS			00000 7641415	INV	03/12/2015	807763	206009		
1 02816970 84802	3300		TRANS ED VEHICLE RE			35.97			
			Invoice Net			35.97			
			CHECK TOTAL			35.97			-----
70502 NATIONAL GRID			00003 579515	INV	03/12/2015	2/27/15-THOMPSON	206186		
1 02756960 82103	4130		FAC MAINT POWER ELEC			2,673.93			
			Invoice Net			2,673.93			
			CHECK TOTAL			2,673.93			-----
24772 NEW ENGLAND ACADEMY			00000 7636915	INV	03/12/2015	ARL0215	206010		
1 02456848 83201	9300		TUITION DY TUITION			4,472.10			
			Invoice Net			4,472.10			



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## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	4,472.10		-----
17599	THE NEW ENGLAND CENTER	00001	7639515	INV	03/12/2015	211061	206011		
	1 02456851 83201 9300		OOD RESIDE	TUITION		8,003.10			
			Invoice Net			8,003.10			
						CHECK TOTAL	8,003.10		-----
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6131503701	205191		
	1 03034309 835001		FOOD SERV	FOOD SERVI		450.22			
			Invoice Net			450.22			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6211505804	205208		
	1 03034309 835001		FOOD SERV	FOOD SERVI		149.56			
			Invoice Net			149.56			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6211505805	205209		
	1 03034309 835001		FOOD SERV	FOOD SERVI		163.16			
			Invoice Net			163.16			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6061431803	206049		
	1 03034309 835001		FOOD SERV	FOOD SERVI		132.08			
			Invoice Net			132.08			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	4181432502	206050		
	1 03034309 835001		FOOD SERV	FOOD SERVI		140.72			
			Invoice Net			140.72			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6231506501	206051		
	1 03034309 835001		FOOD SERV	FOOD SERVI		233.20			
			Invoice Net			233.20			
16817	NEW ENGLAND ICE CREAM	00002	597715	INV	03/12/2015	6231506505	206052		
	1 03034309 835001		FOOD SERV	FOOD SERVI		209.41			
			Invoice Net			209.41			
						CHECK TOTAL	1,478.35		-----
29724	NEW ENGLAND TRANSIT SA	00000	7658015	INV	03/12/2015	IN150799	206012		
	1 02816970 84802 3300		TRANS ED	VEHICLE RE		921.16			
			Invoice Net			921.16			
29724	NEW ENGLAND TRANSIT SA	00000	7658015	INV	03/12/2015	IN150800	206013		
	1 02816970 84802 3300		TRANS ED	VEHICLE RE		726.73			
			Invoice Net			726.73			
29724	NEW ENGLAND TRANSIT SA	00000	7658015	INV	03/12/2015	IN150801	206014		
	1 02816970 84802 3300		TRANS ED	VEHICLE RE		647.12			
			Invoice Net			647.12			
29724	NEW ENGLAND TRANSIT SA	00000	7658015	INV	03/12/2015	IN150830	206015		
	1 02816970 84802 3300		TRANS ED	VEHICLE RE		301.50			
			Invoice Net			301.50			
						CHECK TOTAL	2,596.51		-----
31048	NIHAN, LIANNE	00000		INV	03/12/2015	3685	206266		
	1 02026646 83804 3510		ATH/G/SWIM	ATHLETIC		71.00			
			Invoice Net			71.00			
						CHECK TOTAL	71.00		-----

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
29997	ILLINOIS CENTRAL SCHOO 1 02026985 83301 3510	00001	10866815	INV	03/12/2015	520-00831 300.00 300.00 Invoice Net	205356		
						CHECK TOTAL	300.00		-----
26908	NORTHEAST CUTLERY 1 03034309 865000	00000	596315	INV	03/12/2015	564748 32.00 32.00 Invoice Net	204912		
26908	NORTHEAST CUTLERY 1 03034309 865000	00000	596315	INV	03/12/2015	564749 16.00 16.00 Invoice Net	204913		
						CHECK TOTAL	48.00		-----
22671	NORTHEAST 1 02756960 84308 4220	00001	577615	INV	03/12/2015	S021281226.001 755.00 755.00 Invoice Net	206241		
22671	NORTHEAST 1 02756960 84308 4220	00001	577615	INV	03/12/2015	S021419250.001 26.08 26.08 Invoice Net	206242		
22671	NORTHEAST 1 02756960 84308 4220	00001	577615	INV	03/12/2015	S021443652.001 4.70 4.70 Invoice Net	206243		
22671	NORTHEAST 1 02756960 84308 4220	00001	577615	INV	03/12/2015	S021446968.001 3,000.86 3,000.86 Invoice Net	206245		
						CHECK TOTAL	3,786.64		-----
29232	NSELA 1 02426715 87202 2357	00000	10947815	INV	03/12/2015	176 215.00 215.00 Invoice Net	206187		
						CHECK TOTAL	215.00		-----
30383	O'LOUGHLIN,MATT 1 02026622 83804 3510	00000		INV	03/12/2015	3689 55.00 55.00 Invoice Net	206267		
						CHECK TOTAL	55.00		-----
74684	O'NEILL, JOSEPH E. 1 02026622 83804 3510	00000		INV	03/12/2015	7384 90.00 90.00 Invoice Net	205949		
						CHECK TOTAL	90.00		-----
17563	OPEN CIRCLE 1 08192014 83101 2320	00001	604115	INV	03/12/2015	15066 800.00 800.00 Invoice Net	205357		
						CHECK TOTAL	800.00		-----
30820	PAPA GINO'S	00000	597815	INV	03/12/2015	PG5716887	204914		

## TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 03034309 835001			FOOD SERV	FOOD SERVI	111.25			
				Invoice Net		111.25			
30820	PAPA GINO'S		00000 597815	INV	03/12/2015	PG5716888	204915		
	1 03034309 835001			FOOD SERV	FOOD SERVI	130.00			
				Invoice Net		130.00			
30820	PAPA GINO'S		00000 597815	INV	03/12/2015	PG5716903	205211		
	1 03034309 835001			FOOD SERV	FOOD SERVI	111.25			
				Invoice Net		111.25			
30820	PAPA GINO'S		00000 597815	INV	03/12/2015	PG5716902	206053		
	1 03034309 835001			FOOD SERV	FOOD SERVI	130.00			
				Invoice Net		130.00			
30820	PAPA GINO'S		00000 597815	INV	03/12/2015	PG5716915	206054		
	1 03034309 835001			FOOD SERV	FOOD SERVI	111.25			
				Invoice Net		111.25			
				CHECK TOTAL		593.75			-----
21252	PARKIN, JILL		00000 7656515	INV	03/12/2015	REIMB SPEAKER BAND	205887		
	1 02456824 85110 2420			SPED/WKSHO	EQ INSTRUC	60.33			
				Invoice Net		60.33			
				CHECK TOTAL		60.33			-----
29887	PEDIATRIA HEALTHCARE,		00000 7647215	INV	03/12/2015	0008A05508-01	206081		
	1 02456830 83101 2320			SPED/MEDS	PROF TECH	393.54			
				Invoice Net		393.54			
				CHECK TOTAL		393.54			-----
27223	PEHLKE DESIGN		00000 10839315	INV	03/12/2015	AC0217151	205359		
	1 1336775 83402 6200			SUMMER FUN	PHONE	2,843.25			
				Invoice Net		2,843.25			
				CHECK TOTAL		2,843.25			-----
15550	PEPSI-COLA COMPANY		00000 597515	INV	03/12/2015	32758857	205212		
	1 03034309 835001			FOOD SERV	FOOD SERVI	117.00			
				Invoice Net		117.00			
15550	PEPSI-COLA COMPANY		00000 597515	INV	03/12/2015	32758856	206055		
	1 03034309 835001			FOOD SERV	FOOD SERVI	117.00			
				Invoice Net		117.00			
15550	PEPSI-COLA COMPANY		00000 597515	INV	03/12/2015	34236606	206056		
	1 03034309 835001			FOOD SERV	FOOD SERVI	117.00			
				Invoice Net		117.00			
15550	PEPSI-COLA COMPANY		00000 597515	INV	03/12/2015	34236609	206057		
	1 03034309 835001			FOOD SERV	FOOD SERVI	117.00			
				Invoice Net		117.00			
				CHECK TOTAL		468.00			-----
11048	PICKERING, RUTH		00000 7648815	INV	03/12/2015	REIM MILEGE-FEB'15	206016		
	1 02456818 87101 2320			SPED/DEAF	BUS TRAVEL	3.45			
				Invoice Net		3.45			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	3.45		-----
29216 AGFA CORP	1 201 84000		00001 10874215	INV	03/12/2015	4468104-00	206188		
			GILBERT & MISC			408.95			
			Invoice Net			408.95			
						CHECK TOTAL	408.95		-----
73471 PLAY TIME, INC.	1 15124145 82422 3520		00000 10875115	INV	03/12/2015	32494	205360		
			THOMPSON SUPPLIES			98.82			
			Invoice Net			98.82			
73471 PLAY TIME, INC.	1 15122260 85103 3520		00000 10810615	INV	03/12/2015	31208	206189		
			HARDY GEN HARDY GEN			30.77			
			Invoice Net			30.77			
73471 PLAY TIME, INC.	1 15122260 85103 3520		00000 10810615	INV	03/12/2015	31008	206190		
			HARDY GEN HARDY GEN			44.98			
			Invoice Net			44.98			
73471 PLAY TIME, INC.	1 15122260 85103 3520		00000 10810615	INV	03/12/2015	31009	206191		
			HARDY GEN HARDY GEN			16.95			
			Invoice Net			16.95			
73471 PLAY TIME, INC.	1 15122260 85103 3520		00000 10810615	INV	03/12/2015	31215	206192		
			HARDY GEN HARDY GEN			52.19			
			Invoice Net			52.19			
73471 PLAY TIME, INC.	1 15123260 85103 3520		00000 10810715	INV	03/12/2015	31211	206317		
			AFT SCH GENERAL			51.55			
			Invoice Net			51.55			
73471 PLAY TIME, INC.	1 15123260 85103 3520		00000 10810715	INV	03/12/2015	31217	206318		
			AFT SCH GENERAL			77.78			
			Invoice Net			77.78			
						CHECK TOTAL	373.04		-----
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15136657-00	206246		
			FAC MAINT PLUMBING			671.00			
			Invoice Net			671.00			
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15136980-00	206247		
			FAC MAINT PLUMBING			246.50			
			Invoice Net			246.50			
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15137010-00	206248		
			FAC MAINT PLUMBING			30.58			
			Invoice Net			30.58			
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15136893-00	206249		
			FAC MAINT PLUMBING			868.38			
			Invoice Net			868.38			
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15137776-00	206250		
			FAC MAINT PLUMBING			95.61			
			Invoice Net			95.61			
29937 PLUMBERS' SUPPLY COMPA	1 02756960 84303 4220		00001 578115	INV	03/12/2015	15138184-00	206251		
			FAC MAINT PLUMBING			9.33			
			Invoice Net			9.33			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

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POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
29937	PLUMBERS' SUPPLY COMPA	00001	578115	INV	03/12/2015	15138206-00	206252		
	1 02756960 84303 4220		FAC MAINT	PLUMBING		30.86			
			Invoice Net			30.86			
29937	PLUMBERS' SUPPLY COMPA	00001	578115	INV	03/12/2015	15138220-00	206253		
	1 02756960 84303 4220		FAC MAINT	PLUMBING		58.07			
			Invoice Net			58.07			
			CHECK TOTAL			2,010.33			-----
28105	POLLARD, STEVEN	00000		INV	03/12/2015	7383	205950		
	1 02026622 83804 3510		ATHL/BASKB	ATHLETIC		90.00			
			Invoice Net			90.00			
			CHECK TOTAL			90.00			-----
26372	POWELL, DAVID	00000		INV	03/12/2015	7387	206091		
	1 02026622 83804 3510		ATHL/BASKB	ATHLETIC		90.00			
			Invoice Net			90.00			
			CHECK TOTAL			90.00			-----
31071	POWELL, STACY	00000	7657015	INV	03/12/2015	2/21/15-3/01/15	206017		
	1 02456803 83101 2310		SPED/TUTOR	PROF TECH		100.00			
			Invoice Net			100.00			
			CHECK TOTAL			100.00			-----
30974	PRIMETIME SPORTS INC	00000	10907715	INV	03/12/2015	CV 76822	205358		
	1 02026647 85104 3510		ATH/G/TNIS	ATHL SUPPL		1,611.56			
			Invoice Net			1,611.56			
			CHECK TOTAL			1,611.56			-----
73542	PRO-ED	00001	10859415	INV	03/12/2015	2274972	206018		
	1 02456812 85102 2720		SPED/PT	TESTING		76.95			
			Invoice Net			76.95			
			CHECK TOTAL			76.95			-----
19363	PUENTE, RICK	00000		INV	03/12/2015	3652	206092		
	1 02026635 83804 3510		ATH/G/BB	ATHLETIC		90.00			
			Invoice Net			90.00			
			CHECK TOTAL			90.00			-----
22374	RAEMER, WALLIS	00000	10930915	INV	03/12/2015	MENTORINGSVCS2014-15	206194		
	1 02636575 83101 2357		PROF DEV	PROF TECH		4,000.00			
			Invoice Net			4,000.00			
			CHECK TOTAL			4,000.00			-----
27730	RESEARCH ILD CONFERENC	00000	7657615	INV	03/12/2015	EXEC CONF 10/24/14	206002		
	1 02456575 87202 2357		SPED/P.D.	TRAINING		200.00			
			Invoice Net			200.00			
			CHECK TOTAL			200.00			-----

# TOWN OF ARLINGTON



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POOLED CASH

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
13230 RINDONE, JOSEPH	00000 10944015	INV	03/12/2015			KETTLEBELL X 3	206195		
1 1336770 81112 6200	ADULT ED	INSTRUCT				490.00			
	Invoice Net					490.00			
	CHECK TOTAL					490.00			-----
28032 RITZ, CATHERINE	00000 10942215	INV	03/12/2015			AATF DUES-2015	206193		
1 02516730 87301 2357	C&I WORLD	PROF AFFLI				60.00			
	Invoice Net					60.00			
	CHECK TOTAL					60.00			-----
23093 A. RUSSO & SONS, INC.	00000 10814915	INV	03/12/2015			7586	205361		
1 15122260 84902 3520	HARDY GEN	HARDY FOOD				190.25			
	Invoice Net					190.25			
23093 A. RUSSO & SONS, INC.	00000 10815515	INV	03/12/2015			8582	205362		
1 15123260 84902 3520	AFT SCH	FOOD SUPPL				32.00			
	Invoice Net					32.00			
23093 A. RUSSO & SONS, INC.	00000 10815515	INV	03/12/2015			9679	205363		
1 15123260 84902 3520	AFT SCH	FOOD SUPPL				133.00			
	Invoice Net					133.00			
23093 A. RUSSO & SONS, INC.	00000 10814915	INV	03/12/2015			11337	206196		
1 15122260 84902 3520	HARDY GEN	HARDY FOOD				110.00			
	Invoice Net					110.00			
23093 A. RUSSO & SONS, INC.	00000 10814915	INV	03/12/2015			13469	206197		
1 15122260 84902 3520	HARDY GEN	HARDY FOOD				114.40			
	Invoice Net					114.40			
23093 A. RUSSO & SONS, INC.	00000 10815515	INV	03/12/2015			13460	206319		
1 15123260 84902 3520	AFT SCH	FOOD SUPPL				137.20			
	Invoice Net					137.20			
	CHECK TOTAL					716.85			-----
31121 SAKEY, PAULA	00000	INV	03/12/2015			REFUND LUNCH	206211		
1 03034309 835003	FOOD SERV	FOOD SERV/				90.00			
	Invoice Net					90.00			
	CHECK TOTAL					90.00			-----
24874 SAL'S PIZZA	00000 596015	INV	03/12/2015			0125813	204916		
1 03034309 835001	FOOD SERV	FOOD SERVI				107.10			
	Invoice Net					107.10			
24874 SAL'S PIZZA	00000 596015	INV	03/12/2015			0125814	204917		
1 03034309 835001	FOOD SERV	FOOD SERVI				142.80			
	Invoice Net					142.80			
24874 SAL'S PIZZA	00000 596015	INV	03/12/2015			0125815	204918		
1 03034309 835001	FOOD SERV	FOOD SERVI				71.40			
	Invoice Net					71.40			
24874 SAL'S PIZZA	00000 596015	INV	03/12/2015			0125816	204919		
1 03034309 835001	FOOD SERV	FOOD SERVI				71.40			
	Invoice Net					71.40			
24874 SAL'S PIZZA	00000 596015	INV	03/12/2015			0125818	204920		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 03034309 835001			FOOD SERV	FOOD SERVI	107.10			
				Invoice Net		107.10			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0125819	204921		
	1 03034309 835001			FOOD SERV	FOOD SERVI	178.50			
				Invoice Net		178.50			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126434	205241		
	1 03034309 835001			FOOD SERV	FOOD SERVI	142.80			
				Invoice Net		142.80			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126435	205242		
	1 03034309 835001			FOOD SERV	FOOD SERVI	214.20			
				Invoice Net		214.20			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126436	205243		
	1 03034309 835001			FOOD SERV	FOOD SERVI	71.40			
				Invoice Net		71.40			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126437	205244		
	1 03034309 835001			FOOD SERV	FOOD SERVI	107.10			
				Invoice Net		107.10			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126438	205245		
	1 03034309 835001			FOOD SERV	FOOD SERVI	71.40			
				Invoice Net		71.40			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126439	205246		
	1 03034309 835001			FOOD SERV	FOOD SERVI	142.80			
				Invoice Net		142.80			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126440	205247		
	1 03034309 835001			FOOD SERV	FOOD SERVI	142.80			
				Invoice Net		142.80			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126843	206058		
	1 03034309 835001			FOOD SERV	FOOD SERVI	107.10			
				Invoice Net		107.10			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126844	206059		
	1 03034309 835001			FOOD SERV	FOOD SERVI	178.50			
				Invoice Net		178.50			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126845	206060		
	1 03034309 835001			FOOD SERV	FOOD SERVI	178.50			
				Invoice Net		178.50			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126846	206061		
	1 03034309 835001			FOOD SERV	FOOD SERVI	107.10			
				Invoice Net		107.10			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126847	206062		
	1 03034309 835001			FOOD SERV	FOOD SERVI	107.10			
				Invoice Net		107.10			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126848	206063		
	1 03034309 835001			FOOD SERV	FOOD SERVI	142.80			
				Invoice Net		142.80			
24874	SAL'S PIZZA		00000 596015	INV	03/12/2015	0126849	206064		
	1 03034309 835001			FOOD SERV	FOOD SERVI	142.80			
				Invoice Net		142.80			
CHECK TOTAL						2,534.70			-----

# TOWN OF ARLINGTON

## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
20459 SALEM PUBLIC SCHOOLS	00000 7647815	INV	03/12/2015			TUITION JE-FEB'15	205890		
1 02456848 83201 9100	TUITION DY	TUITION				715.00			
	Invoice Net					715.00			
						CHECK TOTAL	715.00		-----
31138 SANTANDREA, AMANDA	00000	INV	03/12/2015			5529	206268		
1 02026622 83804 3510	ATHL/BASKB	ATHLETIC				45.00			
	Invoice Net					45.00			
						CHECK TOTAL	45.00		-----
73185 SCHOOL SPECIALTY, INC.	00006 65032815	ACI	03/12/2015			208113843400	205364		
1 02156506 85103 2415	ELEM EDUC	INSTRUCT				21.48			
	Invoice Net					21.48			
73185 SCHOOL SPECIALTY, INC.	00006 65030015	ACI	03/12/2015			308102118982	205365		
1 02456809 85103 2415	SPED TEXTS	INSTRUCT				79.40			
	Invoice Net					79.40			
73185 SCHOOL SPECIALTY, INC.	00006 65030315	ACI	03/12/2015			208113721405	205366		
1 02246506 85103 2415	ELEM EDUC	INSTRUCT				127.72			
	Invoice Net					127.72			
73185 SCHOOL SPECIALTY, INC.	00006 65034615	ACI	03/12/2015			208113987412	206199		
1 02156506 85103 2415	ELEM EDUC	INSTRUCT				381.74			
	Invoice Net					381.74			
73185 SCHOOL SPECIALTY, INC.	00006 65034415	ACI	03/12/2015			208113987176	206200		
1 02186506 85103 2415	ELEM EDUC	INSTRUCT				83.44			
	Invoice Net					83.44			
73185 SCHOOL SPECIALTY, INC.	00006 65034315	ACI	03/12/2015			208113987260	206201		
1 02186506 85103 2415	ELEM EDUC	INSTRUCT				226.72			
	Invoice Net					226.72			
73185 SCHOOL SPECIALTY, INC.	00006 65034215	ACI	03/12/2015			208113987415	206202		
1 02186506 84201 2430	ELEM EDUC	OFFICE				3.87			
2 02186506 85103 2415	ELEM EDUC	INSTRUCT				78.56			
	Invoice Net					82.43			
73185 SCHOOL SPECIALTY, INC.	00006 65033815	ACI	03/12/2015			308102145579	206203		
1 02246506 85103 2415	ELEM EDUC	INSTRUCT				76.15			
	Invoice Net					76.15			
73185 SCHOOL SPECIALTY, INC.	00006 65032215	ACI	03/12/2015			208113965180	206204		
1 02026639 83804 3510	ATH/G/GYM	ATHLETIC				21.94			
	Invoice Net					21.94			
73185 SCHOOL SPECIALTY, INC.	00006 65033715	ACI	03/12/2015			208113956721	206205		
1 02246506 85103 2415	ELEM EDUC	INSTRUCT				102.21			
	Invoice Net					102.21			
73185 SCHOOL SPECIALTY, INC.	00006 65033515	ACI	03/12/2015			308102145589	206206		
1 02246506 85103 2415	ELEM EDUC	INSTRUCT				334.53			
	Invoice Net					334.53			
73185 SCHOOL SPECIALTY, INC.	00006 65030215	ACI	03/12/2015			208113721408	206207		
1 02066506 85103 2415	ELEM EDUC	INSTRUCT				260.96			
	Invoice Net					260.96			
73185 SCHOOL SPECIALTY, INC.	00006 65029815	ACI	03/12/2015			208113726895	206208		



# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000

1010

POOLED CASH

WARRANT: 15122

03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 02066506 85103	2415	ELEM EDUC	INSTRUCT		269.92			
			Invoice Net			269.92			
73185	SCHOOL SPECIALTY, INC.	00006 65034815	ACI	03/12/2015		208114002606	206322		
	1 02246506 84201	2430	ELEM EDUC	OFFICE		332.92			
			Invoice Net			332.92			
73185	SCHOOL SPECIALTY, INC.	00006 65034515	ACI	03/12/2015		208113987175	206339		
	1 02246506 85103	2415	ELEM EDUC	INSTRUCT		57.15			
			Invoice Net			57.15			
73185	SCHOOL SPECIALTY, INC.	00006 65034715	ACI	03/12/2015		208113987414	206340		
	1 02246506 85103	2415	ELEM EDUC	INSTRUCT		79.38			
			Invoice Net			79.38			
			CHECK TOTAL			2,538.09			-----
73818	SCHOOLS FOR CHILDREN,	00000 7638415	INV	03/12/2015		115123	205893		
	1 02456848 83201	9300	TUITION DY	TUITION		5,324.94			
			Invoice Net			5,324.94			
73818	SCHOOLS FOR CHILDREN,	00000 7638415	INV	03/12/2015		115551	205897		
	1 02456848 83201	9300	TUITION DY	TUITION		4,203.90			
			Invoice Net			4,203.90			
73818	SCHOOLS FOR CHILDREN,	00000 7640115	INV	03/12/2015		115550	205899		
	1 02456848 83201	9300	TUITION DY	TUITION		4,203.90			
			Invoice Net			4,203.90			
73818	SCHOOLS FOR CHILDREN,	00000 7647015	INV	03/12/2015		115574	205901		
	1 02816980 83301	3300	SPED/REIMB	TRANS		627.55			
			Invoice Net			627.55			
73818	SCHOOLS FOR CHILDREN,	00000 7647015	INV	03/12/2015		115575	205902		
	1 02816980 83301	3300	SPED/REIMB	TRANS		627.55			
			Invoice Net			627.55			
			CHECK TOTAL			14,987.84			-----
73852	SEEM COLLABORATIVE	00000 7635715	INV	03/12/2015		53896	205903		
	1 02456848 83201	9400	TUITION DY	TUITION		5,067.30			
			Invoice Net			5,067.30			
73852	SEEM COLLABORATIVE	00000 7636815	INV	03/12/2015		54308	205904		
	1 02456848 83201	9400	TUITION DY	TUITION		4,000.50			
			Invoice Net			4,000.50			
73852	SEEM COLLABORATIVE	00000 7637515	INV	03/12/2015		54310	205905		
	1 02456845 83201	9300	OOD/AIDE	TUITION		2,805.00			
	2 02456848 83201	9400	TUITION DY	TUITION		4,511.25			
			Invoice Net			7,316.25			
73852	SEEM COLLABORATIVE	00000 7638015	INV	03/12/2015		54311	205907		
	1 02456848 83201	9400	TUITION DY	TUITION		4,376.25			
			Invoice Net			4,376.25			
73852	SEEM COLLABORATIVE	00000 7639015	INV	03/12/2015		53901	205908		
	1 02456848 83201	9400	TUITION DY	TUITION		5,067.30			
			Invoice Net			5,067.30			
73852	SEEM COLLABORATIVE	00000 7649915	INV	03/12/2015		54309	205909		
	1 02456848 83201	9400	TUITION DY	TUITION		4,376.25			
			Invoice Net			4,376.25			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	30,203.85		-----
31120	SHEA, ANDRA 1 03034309 835003			00000 INV FOOD SERV FOOD SERV/ Invoice Net	03/12/2015	REFUND LUNCH 38.00 38.00	206212		
						CHECK TOTAL	38.00		-----
31110	SILVERBERG, DANA 1 02456836 87101 2315			00000 7657215 INV PSYCHOLOGI BUS TRAVEL Invoice Net	03/12/2015	REIM MILEGE-FEB'15 23.00 23.00	206019		
						CHECK TOTAL	23.00		-----
27662	SOCIAL THINKING 1 08192014 85103 2415			00000 621415 INV SUCCESS INSTRUCT Invoice Net	03/12/2015	115915 113.46 113.46	206198		
						CHECK TOTAL	113.46		-----
74061	STONEMAN, CHANDLER & M 1 02456866 83102 1430			00001 579815 INV LEGAL SPED LEGAL SERV Invoice Net	03/12/2015	ARLING 3-40297 1,842.21 1,842.21	206209		
						CHECK TOTAL	1,842.21		-----
74062	AHOLD FINANCIAL SERVIC 1 15124145 82422 3520			00001 10810815 INV THOMPSON SUPPLIES Invoice Net	03/12/2015	447103 75.60 75.60	205367		
74062	AHOLD FINANCIAL SERVIC 1 02456800 84902 2430 2 02856827 84902 2440			00001 7632515 INV PK-SPED FOOD SUPPL SELF CONT FOOD SUPPL Invoice Net	03/12/2015	447117 176.37 80.53 256.90	206020		
74062	AHOLD FINANCIAL SERVIC 1 02456815 84902 2430			00001 7632515 INV SPED/CONS FOOD Invoice Net	03/12/2015	447121 65.75 65.75	206021		
74062	AHOLD FINANCIAL SERVIC 1 15124145 82422 3520			00001 10810815 INV THOMPSON SUPPLIES Invoice Net	03/12/2015	447123 91.19 91.19	206213		
74062	AHOLD FINANCIAL SERVIC 1 15124145 82422 3520			00001 10810815 INV THOMPSON SUPPLIES Invoice Net	03/12/2015	124853 14.96 14.96	206214		
74062	AHOLD FINANCIAL SERVIC 1 15124145 82422 3520			00001 10810815 INV THOMPSON SUPPLIES Invoice Net	03/12/2015	447120 61.76 61.76	206343		
74062	AHOLD FINANCIAL SERVIC 1 15124145 82422 3520			00001 10810815 INV THOMPSON SUPPLIES Invoice Net	03/12/2015	447124 35.87 35.87	206348		
						CHECK TOTAL	602.03		-----
26992	STUDIES WEEKLY 1 02186506 85103 2415			00001 10823415 INV ELEM EDUC INSTRUCT Invoice Net	03/12/2015	143487 148.23 148.23	206210		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
						CHECK TOTAL	148.23		-----
27752 TAFT, ALICIA			00000	7652715 INV	03/12/2015	REIM MILEGE-FEB'15	206023		
1 02456839 87101	2315		TEAM CHAIR	BUS TRAVEL		10.81			
			Invoice Net			10.81			
						CHECK TOTAL	10.81		-----
27240 TCI PRESS			00000	10839615 INV	03/12/2015	80085	206215		
1 1336770 83404	6200		ADULT ED	PRINTING		1,057.00			
			Invoice Net			1,057.00			
						CHECK TOTAL	1,057.00		-----
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	438076	204922		
1 03034309 835001			FOOD SERV	FOOD SERVI		983.37			
			Invoice Net			983.37			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	441332	204923		
1 03034309 835001			FOOD SERV	FOOD SERVI		354.96			
			Invoice Net			354.96			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	438078	204924		
1 03034309 835001			FOOD SERV	FOOD SERVI		976.31			
			Invoice Net			976.31			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	438075	204925		
1 03034309 835001			FOOD SERV	FOOD SERVI		610.67			
			Invoice Net			610.67			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	441333	205248		
1 03034309 835001			FOOD SERV	FOOD SERVI		606.55			
			Invoice Net			606.55			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	441331	205249		
1 03034309 835001			FOOD SERV	FOOD SERVI		463.46			
			Invoice Net			463.46			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	442250	205250		
1 03034309 835001			FOOD SERV	FOOD SERVI		624.85			
			Invoice Net			624.85			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	442247	205251		
1 03034309 835001			FOOD SERV	FOOD SERVI		935.17			
			Invoice Net			935.17			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	394670	205252		
1 03034309 835001			FOOD SERV	FOOD SERVI		1,174.89			
			Invoice Net			1,174.89			
22736 THURSTON FOODS			00000	10815115 INV	03/12/2015	416668	205369		
1 15122260 84902	3520		HARDY GEN	HARDY FOOD		1,187.70			
			Invoice Net			1,187.70			
22736 THURSTON FOODS			00000	10815015 INV	03/12/2015	442249	205370		
1 15123260 84902	3520		AFT SCH	FOOD SUPPL		639.12			
			Invoice Net			639.12			
22736 THURSTON FOODS			00000	595415 INV	03/12/2015	444696	206109		
1 03034309 835001			FOOD SERV	FOOD SERVI		574.84			
			Invoice Net			574.84			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

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POOLED CASH

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
22736 THURSTON FOODS	00000 595415	INV	03/12/2015	444695		206111			
1 03034309 835001	FOOD SERV	FOOD SERVI		506.96					
	Invoice Net			506.96					
22736 THURSTON FOODS	00000 595415	INV	03/12/2015	445007		206112			
1 03034309 835001	FOOD SERV	FOOD SERVI		542.71					
	Invoice Net			542.71					
22736 THURSTON FOODS	00000 10831415	INV	03/12/2015	438077		206216			
1 02016518 84902 2415	FAM/CONS S	FOOD SUPPL		118.59					
	Invoice Net			118.59					
22736 THURSTON FOODS	00000 10831415	INV	03/12/2015	442248		206217			
1 02016518 84902 2415	FAM/CONS S	FOOD SUPPL		114.76					
	Invoice Net			114.76					
22736 THURSTON FOODS	00000 10815015	INV	03/12/2015	445991		206352			
1 15123260 84902 3520	AFT SCH	FOOD SUPPL		362.98					
	Invoice Net			362.98					
22736 THURSTON FOODS	00000 10815015	INV	03/12/2015	417920		206355			
1 15123260 84902 3520	AFT SCH	FOOD SUPPL		287.98					
	Invoice Net			287.98					
22736 THURSTON FOODS	00000 10815115	INV	03/12/2015	446730		206359			
1 15122260 84902 3520	HARDY GEN	HARDY FOOD		1,322.72					
	Invoice Net			1,322.72					
	CHECK TOTAL			12,388.59					-----
28430 TODAY'S STUDENTS TOMOR	00001 10917715	INV	03/12/2015	TSTT 14/15-01		206218			
1 18406507 87301 2210	AHS/LANG	NEASC HS		15,000.00					
	Invoice Net			15,000.00					
	CHECK TOTAL			15,000.00					-----
19095 TRANSCANADA POWER MARK	00000 579715	INV	03/12/2015	5040539		205368			
1 02756960 82103 4130	FAC MAINT	POWER ELEC		36,221.22					
	Invoice Net			36,221.22					
	CHECK TOTAL			36,221.22					-----
18547 TRUCK & BUS SUPPLY CO.	00000 7645315	INV	03/12/2015	4532		205910			
1 02816970 84802 3300	TRANS ED	VEHICLE RE		337.89					
	Invoice Net			337.89					
18547 TRUCK & BUS SUPPLY CO.	00000 7645315	INV	03/12/2015	4536		205911			
1 02816970 84802 3300	TRANS ED	VEHICLE RE		515.36					
	Invoice Net			515.36					
	CHECK TOTAL			853.25					-----
74298 TURF EQUIPMENT COMPANY	00000 528915	INV	03/12/2015	3091		206254			
1 02756965 84321 4110	CUSTODIAL	EQUIP MAIN		18.94					
	Invoice Net			18.94					
74298 TURF EQUIPMENT COMPANY	00000 528915	INV	03/12/2015	4402		206255			
1 02756965 84321 4110	CUSTODIAL	EQUIP MAIN		648.02					
	Invoice Net			648.02					
74298 TURF EQUIPMENT COMPANY	00000 528915	INV	03/12/2015	4625		206256			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
	1 02756965 84321 4110	CUSTODIAL		EQUIP MAIN		10.00			
		Invoice Net				10.00			
74298	TURF EQUIPMENT COMPANY	00000	528915	INV	03/12/2015	4533	206257		
	1 02756965 84321 4110	CUSTODIAL		EQUIP MAIN		36.95			
		Invoice Net				36.95			
74298	TURF EQUIPMENT COMPANY	00000	528615	INV	03/12/2015	3914	206258		
	1 02756965 82904 4110	CUSTODIAL		CUSTODIAL		1,979.97			
		Invoice Net				1,979.97			
		CHECK TOTAL				2,693.88			-----
27327	UPHOLSTERY ON BROADWAY	00000	10944115	INV	03/12/2015	DIY UPHOLS 1/7-2/25	206219		
	1 1336770 81112 6200	ADULT ED		INSTRUCT		3,060.00			
		Invoice Net				3,060.00			
		CHECK TOTAL				3,060.00			-----
27482	VARITRONICS	00000	10890815	INV	03/12/2015	40161	206363		
	1 02246506 85101 2430	ELEM EDUC		REPRO SUPP		723.16			
		Invoice Net				723.16			
		CHECK TOTAL				723.16			-----
11037	VOCELL BUS COMPANY	00000	10867915	INV	03/12/2015	1503104469-4481	206220		
	1 02026985 83301 3510	ATH/B/TRAN		TRANS		997.00			
		Invoice Net				997.00			
		CHECK TOTAL				997.00			-----
13234	W. B. MASON CO., INC.	00001	13234	ACI	03/12/2015	I22731716	205214		
	1 03034309 835005	FOOD SERV		FOOD SERV		193.31			
		Invoice Net				193.31			
13234	W. B. MASON CO., INC.	00001	13234	ACI	03/12/2015	I22781702	205217		
	1 03034309 835005	FOOD SERV		FOOD SERV		50.14			
		Invoice Net				50.14			
13234	W. B. MASON CO., INC.	00001	10781115	ACI	03/12/2015	I23904048	205371		
	1 02016563 84201 2430	LIBRARY/ME		OFFICE		36.54			
		Invoice Net				36.54			
13234	W. B. MASON CO., INC.	00001	611115	ACI	02/23/2015	CR2003582	205372		
	1 02696925 84201 1410	PAYROLL		OFFICE		-3.32			
		Invoice Net				-3.32			
13234	W. B. MASON CO., INC.	00001	611115	ACI	02/23/2015	I23695766	205373		
	1 02696925 84201 1410	PAYROLL		OFFICE		13.28			
		Invoice Net				13.28			
13234	W. B. MASON CO., INC.	00001	10920515	ACI	03/12/2015	I23579966	205374		
	1 02156506 85103 2415	ELEM EDUC		INSTRUCT		1,179.60			
		Invoice Net				1,179.60			
13234	W. B. MASON CO., INC.	00001	611215	ACI	03/12/2015	I23926050	206223		
	1 02696925 84201 1410	PAYROLL		OFFICE		79.87			
		Invoice Net				79.87			
13234	W. B. MASON CO., INC.	00001	625115	ACI	03/12/2015	652135	206261		
	1 18406507 85110 2420	AHS/LANG		EQ INSTRUC		7,504.00			
		Invoice Net				7,504.00			

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

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VENDOR	G/L ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
13234	W. B. MASON CO., INC.	00001	625115	ACI	03/12/2015	652178	206262		
	1 18406507 85110 2420		AHS/LANG	EQ INSTRU		10,561.25			
			Invoice Net			10,561.25			
13234	W. B. MASON CO., INC.	00001	10713315	ACI	03/12/2015	124122063	206365		
	1 02606910 84201 1210		SUPER	OFFICE		168.90			
			Invoice Net			168.90			
13234	W. B. MASON CO., INC.	00001	10890715	ACI	03/12/2015	124088390	206367		
	1 02246506 85101 2430		ELEM EDUC	REPRO SUPP		1,179.60			
			Invoice Net			1,179.60			
13234	W. B. MASON CO., INC.	00001	10890715	ACI	03/12/2015	124058135	206368		
	1 02246506 85101 2430		ELEM EDUC	REPRO SUPP		32.88			
			Invoice Net			32.88			
13234	W. B. MASON CO., INC.	00001	626115	ACI	03/12/2015	124118680	206380		
	1 02666920 84201 1410		BUS OFFICE	OFFICE		250.62			
			Invoice Net			250.62			
			CHECK TOTAL			21,246.67			-----
30295	WALSH, TOM	00000		INV	03/12/2015	3670	205951		
	1 02026622 83804 3510		ATHL/BASKB	ATHLETIC		90.00			
			Invoice Net			90.00			
			CHECK TOTAL			90.00			-----
74469	WANAMAKER HARDWARE	00000	577915	INV	03/12/2015	Close 2/28/15	206259		
	1 02756960 84399 4220		FAC MAINT	MISC MAINT		1,442.34			
			Invoice Net			1,442.34			
			CHECK TOTAL			1,442.34			-----
74469	WANAMAKER HARDWARE	00000	596415	INV	03/12/2015	126769	205253		
	1 03034309 865600		FOOD SERV	FOOD SERV/		12.59			
			Invoice Net			12.59			
			CHECK TOTAL			12.59			-----
74469	WANAMAKER HARDWARE	00000	10830915	INV	03/12/2015	126236	206221		
	1 02016518 85103 2415		FAM/CONS S	INSTRUCT		39.27			
			Invoice Net			39.27			
			CHECK TOTAL			39.27			-----
14390	WAYSIDE YOUTH & FAMILY	00000	7650615	INV	03/12/2015	SVCS 1/1-1/31/15	205912		
	1 02456848 83201 9300		TUITION DY	TUITION		3,841.60			
			Invoice Net			3,841.60			
			CHECK TOTAL			3,841.60			-----
20866	WILLOW HILL SCHOOL	00000	7636415	INV	03/12/2015	15-LG-06	205913		
	1 02456848 83201 9300		TUITION DY	TUITION		2,091.90			
			Invoice Net			2,091.90			
			CHECK TOTAL			2,091.90			-----
31127	WINTHER, ANDREW	00000	10772215	INV	03/12/2015	REIMB TRAINING	206222		

# TOWN OF ARLINGTON



## PRELIMINARY DETAIL INVOICE LIST

CASH ACCOUNT: 0000 1010

POOLED CASH

WARRANT: 15122 03/12/2015

VENDOR	G/L	ACCOUNTS	R	PO	TYPE	DUE DATE	INVOICE/AMOUNT	DOCUMENT	VOUCHER	CHECK
1	0572015	87202	3200	ESH	TRAVEL		225.00			
				Invoice Net			225.00			
				CHECK TOTAL			225.00			-----
29510	WORK OPPORTUNITIES	UNL	00000	7645215	INV	03/12/2015	275082	206082		
1	02456815	83101	2320	SPED/CONS	SPED TRANS		262.50			
				Invoice Net			262.50			
				CHECK TOTAL			262.50			-----
31118	YPSILANTIS, JANE		00000		INV	03/12/2015	REFUND ATHLETICS	206225		
1	143	7289		ATHLETIC F	MISC REV		150.00			
				Invoice Net			150.00			
				CHECK TOTAL			150.00			-----
469	INVOICES			WARRANT TOTAL			643,068.73	643,068.73		

WARRANT: 15122 03/12/2015

Report generated: 03/12/2015 15:08  
User: swalenski  
Program ID: apwarrnt



# TOWN OF ARLINGTON



## PRELIMINARY WARRANT SUMMARY

WARRANT: 15122 03/12/2015

FUND	ORG	ACCOUNT	AMOUNT	AVLB	BUDGET			
0200	02456815	SPED/CONSULT/COACHING	0200-3-45	-6815-36-23-9-00-84902	-2430	FOOD	65.75	.00
0200	02456818	SPED/TEACHER/DEAF C.S.	0200-3-45	-6818-36-02-9-00-83101	-2320	PROFESSIONAL TECH SERV	1,485.00	.00
0200	02456818	SPED/TEACHER/DEAF C.S.	0200-3-45	-6818-36-02-9-00-87101	-2320	BUSINESS TRAVEL	3.45	.00
0200	02456821	SPED/CLINICAL SUPERV/C	0200-3-45	-6821-36-02-9-00-81201	-2320	TEMP SALARIES PROFESSI	36.34	.00
0200	02456821	SPED/CLINICAL SUPERV/C	0200-3-45	-6821-36-02-9-00-83101	-2320	PROFESSIONAL TECH SERV	5,829.00	.00
0200	02456824	SPED/LBLD WORKSHOP	0200-3-45	-6824-36-02-5-00-85110	-2420	INSTRUCTION EQUIPMENT	60.33	.00
0200	02456830	SPED/MEDICAL	0200-3-45	-6830-36-23-9-00-83101	-2320	PROFESSIONAL TECH SERV	393.54	.00
0200	02456836	PSYCHOLOGISTS	0200-3-45	-6836-01-02-9-00-87101	-2315	BUSINESS TRAVEL	23.00	100.00
0200	02456839	TEAM CHAIR TEMP SAL/WA	0200-3-45	-6839-36-02-9-00-87101	-2315	BUSINESS TRAVEL	69.98	.00
0200	02456845	OUT-OF-DISTRICT/ONE ON	0200-3-45	-6845-36-02-9-00-83201	-9300	OOD/ONE-ON-ONE AIDE	12,772.01	.00
0200	02456848	OUT OF DISTRICT TUITIO	0200-3-45	-6848-45-02-9-05-83201	-9100	NON-MEMBER COLLAB TUIT	5,232.62	110,423.76
0200	02456848	OUT OF DISTRICT TUITIO	0200-3-45	-6848-45-02-9-05-83201	-9300	OUT OF DISTRICT/DAY TU	105,655.57	-1,391,209.91
0200	02456848	OUT OF DISTRICT TUITIO	0200-3-45	-6848-45-02-9-05-83201	-9400	SPED LABB TUITION	169,533.80	-72,417.01
0200	02456851	OUT OF DISTRICT RESIDE	0200-3-45	-6851-36-23-9-00-83201	-9300	TUITION OTHER SCHOOLS	80,495.45	.00
0200	02456857	SPED CONTRACTED SERVIC	0200-3-45	-6857-45-02-9-05-83101	-2310	PROFESSIONAL TECH SERV	3,125.00	-8,812.00
0200	02456857	SPED CONTRACTED SERVIC	0200-3-45	-6857-45-02-9-05-83101	-2330	PROFESSIONAL TECH SERV	404.00	-34,670.00
0200	02456866	LEGAL SERVICES SPECIAL	0200-3-45	-6866-45-23-9-07-83102	-1430	SPED LEGAL SERVICES	1,842.21	50,000.00
0200	02516730	C&I WORLD LANGUAGES	0200-3-51	-6730-01-10-9-00-85103	-2415	INSTRUCTIONAL MATERIAL	25.00	-78.74
0200	02516730	C&I WORLD LANGUAGES	0200-3-51	-6730-01-10-9-00-87301	-2357	PROFESSIONAL AFFLIATIO	279.00	-738.50
0200	02606910	SUPERINTENDENT	0200-3-60	-6910-01-29-9-00-83101	-1210	PROFESSIONAL TECH SERV	1,035.00	-13,055.00
0200	02606910	SUPERINTENDENT	0200-3-60	-6910-01-29-9-00-84201	-1210	OFFICE SUPPLIES	168.90	-2,002.38
0200	02606910	SUPERINTENDENT	0200-3-60	-6910-01-29-9-00-84902	-1210	FOOD SUPPLIES	99.48	-77.00
0200	02606910	SUPERINTENDENT	0200-3-60	-6910-01-29-9-00-85806	-1210	MISC SUPPLIES	28.90	462.44
0200	02636575	PROF DEV/ASSISTANT SUP	0200-3-63	-6575-34-09-9-00-83101	-2357	PROFESSIONAL TECH SERV	4,000.00	.00
0200	02636575	PROF DEV/ASSISTANT SUP	0200-3-63	-6575-34-09-9-00-87202	-2357	TRAINING EDUC CONF & A	586.00	.00
0200	02666920	BUSINESS OFFICE	0200-3-66	-6920-01-24-9-07-84201	-1410	OFFICE SUPPLIES	250.62	1,338.97
0200	02666920	BUSINESS OFFICE	0200-3-66	-6920-01-24-9-07-85101	-1410	REPRO PAPER TONER SUPP	380.64	1,105.32
0200	02696925	PAYROLL	0200-3-69	-6925-01-64-9-00-84201	-1410	OFFICE SUPPLIES	89.83	-744.57
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-82103	-4130	POWER ELECTRICITY	38,895.15	-413,958.85
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-82411	-4220	WINDOW GLASS SERVICE S	2,412.56	4,700.00
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-82412	-4220	HVAC CONTRACTED SERVIC	2,160.00	-38,301.00
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-82414	-4220	BOILER CONTRACTED SERV	541.00	6,199.81
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-84201	-4220	OFFICE SUPPLIES	11.56	244.49
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-84303	-4220	PLUMBING SUPPLIES	2,010.33	-21,471.91
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-84308	-4220	ELECTRICAL SUPPLIES	6,012.10	11,690.96
0200	02756960	FACILITIES MAINTENANCE	0200-3-75	-6960-49-28-9-08-84399	-4220	MISC MAINTENANCE SUPPL	1,442.34	-2,889.76
0200	02756965	CUSTODIAL SERVICE	0200-3-75	-6965-49-28-9-08-82904	-4110	CUSTODIAL SUPPLIES CLE	2,705.23	39,157.25
0200	02756965	CUSTODIAL SERVICE	0200-3-75	-6965-49-28-9-08-84321	-4110	EQUIPMENT MAINTENANCE	713.91	-473.35
0200	02816970	TRANSPORTATION REGULAR	0200-3-81	-6970-49-10-9-00-83101	-3300	PROFESSIONAL TECH SERV	35.20	-200.00
0200	02816970	TRANSPORTATION REGULAR	0200-3-81	-6970-49-10-9-00-84802	-3300	MOTOR VEHICLE REPAIR	3,975.73	-41,107.69
0200	02816980	SPED/MILEAGE REIMB	0200-3-81	-6980-36-02-9-00-83301	-3300	CONTRACTED TRANSPORTAT	8,875.40	.00
0200	02816990	TRANSPORTATION HOMELES	0200-3-81	-6990-49-07-9-09-83301	-3300	CONTRACTED TRANSPORTAT	4,082.50	-6,919.10
0200	02856827	SELF CONTAINED ACADEMI	0200-3-85	-6827-01-02-9-00-84902	-2440	FOOD SUPPLIES for SLC	80.53	-128.57
FUND TOTAL							522,158.63	
0300	03034309	FOOD SERVICE REVOLVING	0300-3-3400-0800-30-34-9-NM-835000-			FOOD SERV/SW SUPPLIES	18,895.59	-240,205.19
0300	03034309	FOOD SERVICE REVOLVING	0300-3-3400-0800-30-34-9-NM-835001-			FOOD SERV/SW FOOD	25,224.33	-341,478.69
0300	03034309	FOOD SERVICE REVOLVING	0300-3-3400-0800-30-34-9-NM-835002-			FOOD SERV/FOOD EXPENSE	313.94	-6,816.36
0300	03034309	FOOD SERVICE REVOLVING	0300-3-3400-0800-30-34-9-NM-835003-			FOOD SERV/DIRECT EXPEN	128.00	-1,602.13

# TOWN OF ARLINGTON



## PRELIMINARY WARRANT SUMMARY

WARRANT: 15122 03/12/2015

FUND	ORG	ACCOUNT	AMOUNT	AVLB	BUDGET
0300	03034309	FOOD SERVICE REVOLVING 0300-3-3400-0800-30-34-9-NM-835005-	FOOD SERV/OFFICE SUPPL 243.45	-3,530.89	
0300	03034309	FOOD SERVICE REVOLVING 0300-3-3400-0800-30-34-9-NM-865000-	FOOD SERV/REPAIR/SERVI 48.00	-11,072.30	
0300	03034309	FOOD SERVICE REVOLVING 0300-3-3400-0800-30-34-9-NM-865600-	FOOD SERV/SW EQUIPMENT 12.59	-12,971.88	
		FUND TOTAL	44,865.90		
0570	0572015	ESSENTIAL SCHOOL HEALT 0570-3-3200-SG -45-14-0-NM-87202 -3200	TRAVEL CONFERENCE REGI 225.00	400.00	
		FUND TOTAL	225.00		
0819	08192014	PROJECT S U C C E S S 0819-3-2700-2014-29-12-3-NM-83101 -2320	CONTRACTUAL MENTAL HEA 800.00	-25,510.00	
0819	08192014	PROJECT S U C C E S S 0819-3-2700-2014-29-12-3-NM-83101 -2357	PROFESSIONAL DEVELOPME 375.00	15,976.26	
0819	08192014	PROJECT S U C C E S S 0819-3-2700-2014-29-12-3-NM-85103 -2415	SUPPLIES RESEARCH BASE 144.96	5,891.75	
0819	08192015	PROJECT S U C C E S S 0819-3-2700-2015-29-12-3-NM-85103 -2415	SUPPLIES RESEARCH BASE 264.60	29,712.90	
		FUND TOTAL	1,584.56		
1320	1322015	METCO GRANT 1320-3-2300-2015-45-13-9-NM-83101 -2440	METCO CONTRACTUAL 2,313.00	8,967.00	
		FUND TOTAL	2,313.00		
1330	1336765	COMM ED GENERAL ADMIN 1330-3-2731-6765-01-40-7-NM-83402 -6200	COMMUNICATIONS 2,625.00	-14,830.16	
1330	1336765	COMM ED GENERAL ADMIN 1330-3-2731-6765-01-40-7-NM-87301 -6200	DUES & MEMBERSHIP 50.00	-50.00	
1330	1336765	COMM ED GENERAL ADMIN 1330-3-2731-6765-01-40-7-NM-88501 -6200	FURNITURE & EQUIPMENT 10,000.00	-11,827.94	
1330	1336770	COMM ED ADULT EDUCATIO 1330-3-2731-6770-01-40-7-NM-81112 -6200	INSTRUCTIONAL SALARIES 7,368.75	-55,387.65	
1330	1336770	COMM ED ADULT EDUCATIO 1330-3-2731-6770-01-40-7-NM-83404 -6200	REPRODUCTION/PRINTING 1,057.00	-29,000.00	
1330	1336770	COMM ED ADULT EDUCATIO 1330-3-2731-6770-01-40-7-NM-83408 -6200	DELIVERY-CATALOG DELIV 346.75	-1,400.00	
1330	1336775	COMM ED SUMMER FUN 1330-3-2731-6775-01-40-7-NM-83402 -6200	COMMUNICATIONS 2,843.25	-3,646.00	
		FUND TOTAL	24,290.75		
1410	14115101	AEF FY15 OMS IMPROVEME 1410-3-2723-SG -69-49-0-NM-83101 -2357	FACILITATOR 1,600.00	.00	
		FUND TOTAL	1,600.00		
1430	143	ATHLETIC FEES HIGH SCH 1430-3-2734-OR -33-51-5-NM-7289 -	MISCELLANEOUS REVENUE 950.00	.00	
		FUND TOTAL	950.00		
1512	15122260	HARDY GENERAL SUPPLIES 1512-3-2300-0025-15-5 -3-NM-84902 -3520	HARDY FOOD 2,925.07	-15,335.56	
1512	15122260	HARDY GENERAL SUPPLIES 1512-3-2300-0025-15-5 -3-NM-85103 -3520	HARDY GENERAL SUPPLIES 144.89	-11,000.63	
1512	15123260	THOMPSON AFTER SCHOOL 1512-3-2300-OR -15-6 -3-NM-84902 -3520	THOMPSON FOOD SUPPLIES 1,592.28	-17,162.27	
1512	15123260	THOMPSON AFTER SCHOOL 1512-3-2300-OR -15-6 -3-NM-85103 -3520	THOMPSON GENERAL SUPPL 129.33	-3,461.64	
1512	15124145	OTTOSON 1512-3-24 -OR -24-9 -3-NM-82422 -3520	OTTOSON GENERAL SUPPLI 378.20	-7,527.61	
		FUND TOTAL	5,169.77		
1690	169	BILL'S BOOKS (THOMPSON 1690-3-2735-OSR -03-00-4-NM-85106 -2410	TEXTBOOKS BOOKS PERIOD 495.68	-12,075.01	
		FUND TOTAL	495.68		

# TOWN OF ARLINGTON



## PRELIMINARY WARRANT SUMMARY

WARRANT: 15122 03/12/2015

FUND	ORG	ACCOUNT	AMOUNT	AVLB	BUDGET
1840	18406507	AHS/FOREIGN LONG	23,994.93		.00
1840	18406507	AHS/FOREIGN LONG	15,000.00		.00
		FUND TOTAL	38,994.93		
1950	1952	TRANSCRIPTS	11.56		12,791.45
		FUND TOTAL	11.56		
2010	201	GILBERT & SULLIVAN PER	408.95		-12,785.90
		FUND TOTAL	408.95		
WARRANT SUMMARY TOTAL			643,068.73		
GRAND TOTAL			643,068.73		

\*\* END OF REPORT - Generated by Steve Walenski \*\*

***Draft***

***Arlington School Committee  
School Committee Regular Meeting  
Thursday, March 12, 2015  
6:30 PM***

*Arlington High School  
School Committee Meeting  
869 Massachusetts Avenue, 6th Floor  
Arlington, MA 02476*

*Present: Mr. Hayner, Chair, Mr. Jeff Thielman, Vice Chair, and Kirsi Allison-Ampe, MD, Secretary, Mr. Schlichtman, Mr. Pierce, Ms. Starks, Ms. Susse*

*Dr. Kathleen Bodie, Superintendent, Dr. Laura Chesson, Assistant Superintendent, Ms. Diane Johnson, Chief Financial Officer Mr. Rob Spiegel, Human Resource Office, Linda Hanson, AEA rep and Ms. Karen Fitzgerald, Administrative Assistant.*

*Absent: Ms. Alison Elmer, Director of Special Education*

***Open Meeting***

*Mr. Thielman entered at 6:33 p.m.*

*Ms. Johnson entered at 7:08 p.m.*

*Open Meeting \* The Regular School Committee meeting will start immediately following the Public Hearing on the FY 16 Superintendent's Proposed School Budget. Therefore, the following times are the estimated times, and actual times may be shorter or longer.*

*Mr. Hayner read the public statement:*

*We have been informed that during the public comment section of our meeting this evening, one or more individuals may be addressing information about James Martin, a former employee of the school district who was recently charged with criminal conduct. The safety of your children is one of the highest priorities of the Arlington School Committee and the entire Arlington School System.*

*While we welcome public input at our meetings, I wanted to remind you that, as an employer, the Arlington School Committee cannot make public disclosures about confidential personnel matters including providing information about a former employee's performance and disciplinary record. We can and have provided information that is public including Mr. Martin's dates of employment with the Arlington Public Schools and the*

*positions he held. Mr. Martin, like all employees in the Arlington Public Schools, passed a criminal background check prior to being employed.*

*Mr. Martin was employed by the Arlington Public Schools for two school years: 2011-2012 and 2012-2013. He started as a teaching assistant at Stratton Elementary School in September of 2011, and in April of 2012 he became a teaching assistant/building substitute at the Ottoson Middle School. While working in these positions, he performed duties under the direction of teachers and administrators. He did not participate in the fifth grade science camp or any other overnight programs associated with the Arlington Public Schools. Mr. Martin resigned from his employment with the Arlington Public Schools at the end of the 2012-2013 school year, and he has not been employed by the Arlington Public Schools in any capacity since the end of the 2012-2013 school year.*

*Although the recent criminal charges against Mr. Martin are very serious, we have no information or allegations that this former employee engaged in any criminal conduct while he was employed by the Arlington Public Schools or with any Arlington Public School student.*

*It is our sincerest hope that if anyone has further information they should contact the Arlington Police Department.*

### *Public Participation*

*Mr. Rob Chalmers, Stratton School parent read a statement he had sent to the School Committee members and to Dr. Bodie, Superintendent of Schools, dated, March 12, 2015 on the former Arlington Teaching Assistant who had been arrested. Mr. Chalmers requested a paper trail investigation on the matter and asked the School Committee to take this letter into serious consideration.*

*Mr. John Bromley, Stratton and OMS parent also spoke on his concern for their children and other children while the former Teaching Assistant worked at Stratton Elementary School. Mr. Bromley requested more communication with the parents and how the parents should be handling the issues at hand.*

*Mr. Hayner informed Mr. Chalmers and Mr. Bromley that once again neither he nor the school department can comment on the ongoing investigation and for parents to contact Chief Fredrick Ryan of the Arlington Police Department if they have any concerns.*

### FY 16 Budget Discussions

*Dr. Bodie said tonight is the evening we come to vote the FY 16 Budget and then to bring the budget forward to the Finance Committee on March 23, 2015 and then to Town Meeting in May.*

*Dr. Bodie spoke on two major changes to the budget next year; one is the reduction of the Kindergarten Grant and the mandate to provide ELL minutes of support for our level 1 and 2 ELL students and hours for level 3, 4 and 5 ELL students. This could mean 3 to 4 additional ELL teachers.*

*Dr. Chesson and Dr. Bodie spoke on the teaching issues for the ELL students, the reserved teaching positions for our district, and additional reserved positions based on increased enrollment numbers through our the district. The areas being considered are to reduce money once again out of the legal line items and the OMS ½ cluster proposal.*

*Ms. Susse and Ms. Starks inquired on how many reserved positions overall are needed, as well as how many ELL, or specialists positions are needed at the OMS. The committee discussed the Kindergarten Budget and Chapter 70 money and noted we should hold reserve teacher positions for enrollment growth too. After each members spoke on the disappointing budget 9c cuts, and that that the unions have yet to settle the contract before budget lines items can be voted on. Ms. Johnson informed the members that we are to vote the lump sum number of the budget now, since we voted town appropriation in January. The Budget number is \$59,387,766. Since we have enough in the reserves, Ms. Johnson said we can avoid cuts and increase of fees. The Metco budget will be at the FY 15 budget level and the Kindergarten grant will be discussed at a joint meeting between Ms. Starks and Ms. Hanson and Mr. Chapdelaine, Town Manger.*

*Ms. Johnson said: as of March 12th the collective bargaining agreements are not yet settle. The estimated amounts for contract settlements are listed in the administration total until the unions reach a settlement agreement. At that time, the contract increases will be added to each of the Budget Transfer lines, and a request will be made for the School Committee to vote and confirm those amounts by each line item.*

*At this time, we request that the School Committee vote the total FY 16 Budget amount of \$59,387,766 as one lump sum.*

***Mr. Thielman moved that the School Committee request the funding of \$ 59,387,766 in one lump sum for the FY 16 budget, seconded by Mr. Pierce.***  
***Voted: 7-0***

### Monthly Financial Reports

*Ms. Johnson provided the Financial Reports as of March 3, 2015 to the full committee. Mr. Hayner had questions on a few line items which Ms. Johnson answered.*

### Superintendent's Report

*Dr. Bodie said we have 6 snow days and last school day of school will be June 25<sup>th</sup>. Once we hit April 1 we would not have to make up any snow days that occur in April or later. Dr. Bodie*

*explained the contract of the teachers along with school calendar. Dr. Bodie and Dr. Chesson both congratulated on how well our athletic teams are doing and on how proud the students behaved at the events. It was announced spring season starts in a week and we are working to have the tennis courts and fields ready.*

*Community Ed: Youth and Teen Program Coordinator Job Description Approval*

*Mr. Spiegel spoke on the self-supporting position the Community Education Department is seeking a job approval on to coordinator after school enrichments and summer programs.*

***Ms. Starks moved to approve the job description which falls under self-supporting Community Education on the part time positions: Youth and Teen Program Coordinator, seconded by Mr. Pierce.***

***Voted: 7-0***

#### *Consent Agenda*

***Mr. Hayner moved to approve All items listed with an asterisk are considered to be routine and will be enacted by one motion. There will be no separate discussion of these items unless a member of the committee so requests, in which event the item will be considered in its normal sequence:***

***\*Approval of Warrant: Warrant # 15115, dated 02/26/2015, Amount: \$695,329.80.***

***\*Approval of Minutes: Public Hearing on FY 16 Budget, on February 26, 2015***

***Minutes and Regular meeting on February 26, 2015, amended by Dr. Allison-Ampe to pull out all the minutes.***

***Ms. Starks moved to approve the Warrant # 15115, dated 02/26/2015, Amount: \$695,329.80., seconded by Mr. Thielman,***

***Voted: 7-0***

***Mr. Thielman moved to vote to approve the Public Hearing on FY 16 Budget minutes on February 26, 2015 and the School Committee Regular meeting on February 26, 2015, seconded by Ms. Starks.***

***Voted: 5-2 Mr. Pierce and Dr. Allison-Ampe Abstained***

***Mr. Thielman moved to approve the School Committee Regular meeting minutes on February 26, 2015, seconded by Ms. Starks.***

***Voted: 5-2 Mr. Pierce and Dr. Allison-Ampe Abstained***

#### *Subcommittee & Liaison Reports & Announcements*

*Policies & Procedures, J. Pierce nothing to report.*

*Budget, C. Starks presented the draft minutes from March 4, 2015 Budget Subcommittee meeting and spoke about a meeting she plans to hold with Ms. Hanson and Town Manager, Adam Chapdelaine next week. Dr. Allison-Ampe recommends placing a draft letter about the foundation budget she wants the committee to support on our next agenda in March.*

*Community Relations, P. Schlichtman, presented the draft minutes from the March 5, 2015 meeting. The main topics discussed were the parent's satisfaction survey and the district website being updated.*

*Curriculum, Instruction & Assessment & Accountability, K. Allison-Ampe*

*Facilities, J. Thielman will hold a meeting on Thursday, March 19<sup>th</sup> at 4:30 p.m.*

*Special Study Group on Superintendent's Evaluation, B. Hayner, included the Questionnaire to Administrators on Superintendent's Evaluation and will bring to the next meeting for a vote.*

*Mr. Hayner informed the members on March 16, the Administrators Contract Review subcommittee will meet at 6 p.m. to review the Assistant Superintendents and the CFO contract.*

*School Committee and Human Rights Commission Joint Subcommittee, the approved minutes from January 15, 2015 were included in the packet.*

*Announcements: Ms. Johnson and Dr. Bodie will present the budget to the finance Committee on Monday, March 23, 2015 at the Arlington Police Station at 7:30 p.m. the next Town Election will be held on Saturday, March 28, and the high school students will be performing Shrek on March 27 & 28.*

*Chair, nothing to report*

#### *Executive Session*

***Mr. Pierce move to enter into Executive Session at 7:28 p.m. to conduct strategy sessions in preparation for negotiations with union and/or nonunion personnel or contract negotiations with union and /or nonunion in which if held in an a open meeting may have a detrimental effect, and to conduct strategy with respect to collective bargaining or litigation, in which if held in an open meeting may have a detrimental effect, Collective bargaining may also be conducted, and to discuss the deployment of security personnel or devices, or strategies with respect thereto: and only exit for the purpose of adjournment, seconded by Ms. Susse.***

***Roll Call: unanimous***

#### *Adjournment*

***Ms. Susse moved to adjournment at 8:25 p.m., seconded by Ms. Starks.***

***Voted: 7-0***

*Respectfully submitted by  
Karen M. Fitzgerald  
Administrative Assistant  
Arlington School Committee/kaa*



***Draft***

***Arlington School Committee  
School Committee Regular Meeting  
Thursday, March 12, 2015  
6:30 PM***

*Arlington High School  
School Committee Meeting  
869 Massachusetts Avenue, 6th Floor  
Arlington, MA 02476*

*Public Hearing on the FY 16 Superintendent's Proposed Budget  
6:30 p.m.*

*Present: Mr. Hayner, Chair, Kirsy Allison-Ampe, MD, Secretary, Mr. Schlichtman, Mr. Pierce, Ms. Starks, and Ms. Susse*

*Dr. Kathleen Bodie, Superintendent, Dr. Laura Chesson, Assistant Superintendent Mr. Rob Spiegel, Human Resource Office, Ms. Karen Fitzgerald, Administrative Assistant.*

*Absent: Mr. Jeff Thielman, Vice Chair, Ms. Diane Johnson, Chief Financial Officer, Ms. Alison Elmer, Director of Special Education*

***Open Meeting***

*Mr. Hayner moved to enter the Public Hearing on the FY 16 Superintendent's Proposed Budget, seconded by Mr. Pierce*

*Voted: 6-0*

***Public Hearing on the FY 16 Superintendent's Proposed Budget***

*None*

***Adjournment***

*Ms. Starks moved to adjourn from the Public Hearing at 6:30 p.m., seconded by Mr. Schlichtman.*

*Voted: 6-0.*

*Respectfully submitted by  
Karen Fitzgerald  
Administrative Assistant  
Arlington School Committee*





## Town of Arlington, Massachusetts

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### 8:25 p.m. Subcommittee & Liaison Reports & Announcements

#### Summary:

*Policies & Procedures, J. Pierce*

*Budget, C. Starks*

*Community Relations, P. Schlichtman*

*Curriculum, Instruction & Assessment & Accountability, K. Allison-Ampe*

*Facilities, J. Thielman*

*Special Study Group on Superintendent's Evaluation, B. Hayner*

*Vote to approve the four Goals and Survey for Superintendent Bodie*

- *Practice Goal 2014-2015*
- *Student Achievement Goal 2014-2015*
- *School Committee Superintendents Goals, 3.4 and 4.3*
- *Questionnaire on Administrative Survey on Superintendent*

*School Committee and Human Rights Commission Joint Subcommittee*

*Administration Contract Review Committee*

*Announcements*

*Chair*

- *Vote to hold the School Committee Organizational Meeting, April 9, 2015 at 6:15 p.m.*

#### ATTACHMENTS:

Type	Description
☐ Minutes	Facilities Jan 22 2015 approved minutes
☐ Minutes	Facilities March 19 2015 draft minutes
☐ Goals	Practice Goal 2
☐ Goals	Student Achievement Goal
☐ Goals	District Goal III.4 Dev a plan on space to enrollment growth
☐ Goals	District Goal IV-3 The district website
☐ Goals	Draft Questionnaire 3 26 2015

Arlington School Committee  
Facilities Subcommittee

Meeting Minutes  
Thursday, January 22, 2015 @ 4:30 p.m.

Attendance

Subcommittee Members: Jeff Thielman (Chair), Cindy Starks, Kirsi Allison-Ampe, M.D.

District Leadership: Kathleen Bodie, Ed.D. (Superintendent), Diane Johnson (CFO), Kristin DeFrancisco (Principal, Hardy School)

Other SC Members: Bill Hayner

Guests: Len Kardon, Kevin Fudge, Cheryl Fudge, Michelle Marshall, Alex Bilsky, Andy Forbes, Jennifer Irvine

The meeting was called to order at 4:32 p.m.

**1. Public Participation**

- Len Kardon said that now that the Capital Planning Committee has given approval to move forward with the Stratton, he is interested in knowing the district's plans to accommodate students during the rebuild.
- Kevin Fudge, Cheryl Fudge, and Michelle Marshall said they wanted to hear the district's plans to address safety issues with the Hardy playground. They are parents of Hardy students.

**2. Hardy Playground discussion**

- Diane Johnson reported that Jody Reale of Reale & Associates is finishing a report on the Hardy Playground. When the plan is complete, the district will make repairs to the playground. The goal is to finish the project by the end of this school year with funds from the district's operating budget.
- Ms. Johnson said that the district is working with the town to clarify responsibility for the playgrounds. Some playgrounds immediately adjacent to schools are the responsibility of the school department; some are not. She is working with the town to develop an inspection and maintenance plan for all playgrounds. Her goal is to transfer all playgrounds to the jurisdiction of the Department of Recreation.
- It was clarified during the discussion that whether the playground is under the jurisdiction of the school department or the department of recreation, the principal is responsible for the safety of the children who play on it. S/he can determine if a play structure is unsafe and forbid children from playing in part or all of a playground until it is safe.

**3. MSBA re-application for Arlington High School**

- Dr. Bodie committed to share the application with the School Committee and to ask for comment/suggestions.
- Dr. Allison-Ampe suggested the application be more granular and pull out some of the points about egress and safety made in the HMFH report. She said this would be more effective than simply attaching the report to the application.
- The School Committee will vote to endorse the plan for the Stratton in March. The Statement of Interest (SOI) must be submitted by April 10<sup>th</sup>.

**4. Space Planning for 2015-16 and Long Range Planning**

- Dr. Bodie said the district should have enough space for all classrooms next year. She does not anticipate moving the SLC classroom from the Bracket.
- The district is getting quotes from various vendors to analyze our long-term space needs. Dr. Bodie anticipates securing a vendor in the spring that would study the district and offer various scenarios of different enrollment options to address immediate and long-term needs.
- The study will be funded with School Department funds.

**5. Planning when the Stratton is rebuilt**

- Dr. Bodie said that the go-head for improvements to the Stratton will not occur until Town Meeting. The current financial plan does not require a debt exclusion vote. The School Committee needs to vote to endorse the plan.
- A plan needs to be in place to accommodate displaced students in the fall of 2016.
- The subcommittee reviewed various options for placing modular classrooms in different locations in the district.
- A plan calls for housing all 18 general education classrooms at Stratton in modular classrooms. Six modular units at the middle school would remain to address the increasing enrollment at Ottoson. Other units would be installed at the Bishop and Hardy schools.
- The district is also taking into account transportation issues.
- The district would like to order modular classrooms in June of this year.

The meeting adjourned at 5:45 p.m

**The next meeting will be Thursday, March 19<sup>th</sup> at 4:30 p.m.**

**Arlington School Committee  
Facilities Subcommittee**

**Meeting Minutes  
Thursday, March 19, 2015 @ 4:30 p.m.**

Attendance

Subcommittee Members: Jeff Thielman (Chair), Cindy Starks, Kirsi Allison-Ampe, M.D.

District Leadership: Kathleen Bodie, Ed.D. (Superintendent)

Guests: Len Kardon (Member, Arlington Finance Committee)

The meeting was called to order at 4:32 p.m.

**1. Public Participation**

- None

**2. January 22, 2015 meeting minutes – approved 3-0**

**3. Hardy Playground Update**

- Dr. Bodie reported that the estimate for the repairs to the playground is \$60,000. The district had estimated that the project would cost no more than \$20,000. Diane Johnson, the CFO, is looking through the budget to see if there is a savings anywhere that could make up the \$40,000 difference.
- Dr. Bodie said that the district cannot get another bid because we must work with the company that built the playground.
- If we cannot secure the total funding, we may need to phase the repairs and, possibly, close some parts of the playground.

**4. MSBA re-application for Arlington High School**

- Dr. Kirsi Allison-Ampe asked Dr. Bodie to review the Saugus High School SOI, which made a case that it was a priority one school because the building required many safety upgrades. Dr. Bodie said she would ask Diane Johnson and Mark Miano to look into this.
- The sentiment of the subcommittee was that it would be worth trying to make this case given that the Saugus SOI was accepted.
- Dr. Bodie said the School Committee will vote on the SOI at its meeting on March 27, 2015, and the Board of Selectmen will vote in early April. The SOI must be submitted by April 10, 2015.
- The SOI will contain updated enrollment, security and infrastructure information.

**5. Report on hiring a space consultant**

- Dr. Bodie reported that the district has proposals from bids sent out in January and will select a firm shortly. The project will begin in the spring of 2015 and conclude by August or September.
- The goal is to give the district enrollment projections and an evaluation of our space needs.
- The report will inform longer term planning that will need to start during the 2015-16 school year.
- Subcommittee members suggested that this work could inform the goals set by the Superintendent in 2015-16.

**6. Modular planning for the Stratton rebuild**

- Capital Planning Committee request for funding of the Stratton project will be before Town Meeting in April.
- \$2 million is in the plan for relocation costs, including modular classrooms.
- Once Town Meeting approves the funds for the Stratton project, the Town will issue bid requests for modular classrooms. It takes a year to make the modular classrooms, which will need to be installed by August of 2016. Construction begins at the close of school in June 2016.
- Dr. Bodie and her staff are currently finalizing the locations of the classrooms. The bids will include some short and long-term leases. This will allow us to keep some modular classrooms after the rebuild of Stratton is complete.

**7. New Business**

- The school district hired a company that blows snow off the turf of the fields. They finished on time, which is allowing some of our spring sports teams to practice outdoors.
- The district applied a positive fault diagnosis at the Peirce on HVAC and all other systems. Information learned from Peirce will be applied to the other schools. The project is designed to help us anticipate needed maintenance in other schools before problems occur.
- The football field turf will be replaced this summer pending Town Meeting approval of the Capital Plan.
- The preventive action taken to clear the roofs during the winter storms has meant that we do not have any significant damage from the storms.
- Dr. Bodie pointed out that the new joint town/school maintenance department will lead to more efficient management of all of the town's and school's facilities.

The meeting adjourned at 5:20 p.m.

**Practice Goal 2014-2015**  
**Superintendent Annual Educator Plan**

**Submitted by: Kathleen Bodie**  
**December 2014**

***Practice Goal:*** In order to effectively supervise and support principals, as well as support high expectations for learning, teacher consistency and common focus on instruction, I will visit each school a minimum of six times between December 2014 and November 2015, that will include a meeting with the principal and classroom or meeting observations. I am continuing this practice goal from last year because of the importance of school visits by the Superintendent to support and ensure a consistent focus on district and school goals, maintain visibility in the district, support principals, and understand first-hand the needs in each school.

The Superintendent is responsible for (1-B) “observing principal practice and artifacts, ensuring that principals identify a variety of effective teaching strategies and practice when they observe practice”. Additionally, the Superintendent must (1-D), “ make at least three unannounced visits to each school to observe principal practice every year and provides targeted constructive feedback to all administrators. Acknowledges effective practice and provides redirection and support for those whose practice is less than *Proficient* .” It is only possible to provide this level of oversight by being present on a regular basis in schools.

***Key Actions:***

1. Schedule school visits in the calendar with sufficient time to meet with the principal and visit classrooms and observe meetings, particularly data meetings.
2. Continue to engage the Administrative Team in professional development throughout the year to improve calibration of observations and evaluations.
3. Keep notes or artifacts, if any, from each visit.

***Benchmarks:***

1. Calendar will show schedule and time of each visit.
2. Principal survey in June 2015 will show principal reflections on the process, including knowledge and skills learned through participation in the process.
3. Create a drop box for evidence to be accessed by committee members

**Superintendent Standards Reference:**



## ***Superintendent Standards & Indicators Rubric***

<b>Indicator I-A. Curriculum: Ensures that all instructional staff design effective and rigorous standards-based units of instruction consisting of well-structured lessons with measurable outcomes.</b>				
<b>I-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-A-2. Lesson Development Support	Does not state expectations for administrators that they establish effective strategies to ensure development of well-structured lessons, does not provide training or support, and/or does not discriminate between strong and weak strategies for ensuring effective lesson-planning practices.	Provides limited training to administrators on how to establish effective strategies for ensuring that educators develop well-structured lessons and/or does not consistently identify and/or address patterns when there is evidence of a weak strategy being employed.	<b>Supports administrators to learn and establish effective strategies for ensuring that educators develop well-structured lessons with challenging, measurable objectives and appropriate student engagement strategies, pacing, sequence, activities, materials, technologies, and grouping.</b>	Supports administrators to collaborate on developing strategies that enable educators to consistently develop series of interconnected, well-structured lessons with challenging objectives and appropriate student engagement strategies, pacing, sequence, materials, and grouping and identifies specific exemplars and resources in each area. Is able to model this element.

<b>Indicator I-B. Instruction: Ensures that practices in all settings reflect high expectations regarding content and quality of effort and work, engage all students, and are personalized to accommodate diverse learning styles, needs, interests, and levels of readiness.</b>				
<b>I-B. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-B-1. Instructional Practices	Does not look for evidence of and/or cannot accurately identify ways that principals identify effective teaching strategies when the principals observe practice and review unit plans..	While the superintendent may observe principal practice and artifacts, s/he only occasionally looks for evidence that principals are identifying effective teaching strategies and practices when they observe practice and review unit plans.	<b>While observing principal practice and artifacts, ensures that principals identify a variety of effective teaching strategies and practices when they observe practice and review unit plans.</b>	While observing principal practice and artifacts, ensures that principals know and employ effective strategies and practices for helping educators improve instructional practice. Is able to model this element.

<b>I-B. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-B-3. Diverse Learners' Needs	Does not look for evidence of and/or cannot accurately identify ways that principals identify effective teaching strategies and practices that are appropriate for diverse learners.	While the superintendent may observe principal practice, s/he only occasionally looks for evidence that principals are identifying effective teaching strategies and practices that are appropriate for diverse learners when they observe practices and review unit plans.	<b>While observing principal practice, ensures that principals look for and identify a variety of teaching strategies and practices that are effective with diverse learners when they observe practices and review unit plans.</b>	Employs strategies that ensure that principals know and consistently identify teaching strategies and practices that are meeting the needs of diverse learners while teaching their content. Is able to model this element.

**Indicator I-D. Evaluation: Provides effective and timely supervision and evaluation of all staff in alignment with state regulations and contract provisions.**

<b>I-D. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-D-2. Observations and Feedback	Rarely conducts visits to observe principal practice and/or does not provide honest feedback to administrators who are not performing proficiently.	Makes infrequent unannounced visits to schools to observe principal practice, rarely provides feedback that is specific and constructive for administrators, and/or critiques struggling administrators without providing support to improve their performance.	<b>Typically makes at least three unannounced visits to each school to observe principal practice every year and provides targeted constructive feedback to all administrators. Acknowledges effective practice and provides redirection and support for those whose practice is less than <i>Proficient</i>.</b>	Makes unannounced visits to schools throughout the year to observe administrator practice and provides targeted constructive feedback to all administrators. Engages with all in conversations with all administrators about improvement, celebrates effective practice, and provides targeted support to administrators whose practice is less than <i>Proficient</i> . Is able to model this element.
I-D-4. Alignment Review	Does not review alignment between judgment about practice and data about student learning when evaluating and rating administrators.	Occasionally reviews alignment between judgment about practice and student learning data.	<b>Consistently reviews alignment between judgment about practice and student learning data and provides guidance to administrators to make informed decisions about educator support and evaluation based upon this review.</b>	Studies alignment between judgment about practice and data about student learning when evaluating and rating administrators and provides effective support around this practice. Is able to model this element.

**2014-2015 District Goals Reference:**

Goal I – 1: Action plans and outcomes will emphasize inquiry and experiential learning in order to promote student engagement and a deeper understanding of the curriculum.

Goal I – 4: In an effort to narrow the achievement gap, APS will provide students in subgroups additional support in order to improve their achievement on the state accountability assessments, as measured at each school by an annual or cumulative Progress and Performance Index (PPI) of at least 75 in the aggregate and in the high needs subgroups.

Goal I – 5: Scores for students in the aggregate at each grade level tested on the state accountability assessments in the areas of Mathematics and English Language Arts will evidence a Student Growth Percentile (SGP) of 51 or higher.

Goal II – 4: The District will support its administrators and teachers through professional development opportunities that are aligned to the needs of its staff, including instructional support and content knowledge, coaching, technology competence and ability to differentiate instruction.

**Student Achievement Goal  
2014-2015  
Superintendent Annual Educator Plan  
Submitted by: Kathleen Bodie  
December 2014**

***Student Achievement Goal:*** Student performance on MCAS 2015 for high need students at all levels and at each grade tested will improve from the MCAS baseline in 2014.

***Key Actions:***

1. Grade level and department data teams will be supported with time and analytic tools to analyze student performance data, monitor progress, and design and modify lesson plans to support all learners, particularly students who struggle.
2. Team of three substitutes will be hired to provide coverage for elementary teachers to participate in data team meetings on a regular basis. The team will circulate among the elementary schools, providing substitute coverage approximately every seven school days at each school. The team will meet on an on-going basis with the Assistant Superintendent to design common grade-level lessons.
3. Middle school teachers will meet during departmental common planning time to review and analyze student performance data and design and modify curriculum to scaffold or reteach concepts and skills not mastered.
4. High school teachers will be provided time during department meetings to review and analyze student performance data and revise curriculum as needed. The focus of PLCs will be student performance in specific courses.
5. Math and ELA curriculum leaders will facilitate curriculum working sessions with teachers K – 12 over the summer to include, but not be limited to, review of curriculum maps to ensure alignment with Common Core state standards, integration of literacy requirements for Common Core into Science, Social Studies and mathematics, review and update of common assessments, including DDMs.
6. Teachers in Grades K – 5 will have at least two professional development workshops during the early release days in 2014-2015 to focusing on math content and implementation of math practices standards of the Common Core. The professional development sessions will also include preparation for changes in curricula due to changes in MCAS as it focuses solely on the Common Core.
7. Teachers K-5 will have at least two professional development workshops during early release days in 2014-2015 focused on close reading and writing.
8. Mathematics coaches at the elementary level will provide regular in- classroom coaching sessions with classroom teachers to ensure fidelity with the district curricula and the Common Core.
9. DDMs will be administered during the year in all disciplines, reviewed and analyzed. The results will be used to adjust and modify instruction to help students learn the content standards.

10. The Special Education Coordinator and Principal will support student performance goals/RTI by mutual attendance at Student Support Team weekly meetings.
11. Substantially separate mathematics classes will become a co-taught inclusion model with the addition of general education students at the appropriate skill level.
12. At the middle school, a content teacher will be paired with an SLC teacher for substantially separate classes in Mathematics

**Benchmark:**

1. The student achievement scores in mathematics on the 2015 MCAS will improve at all levels for the high needs subgroup from the MCAS baseline in 2014.
2. Create a drop box for evidence to be accessed by committee members

**Standards Reference:**

***Superintendent Standards & Indicators Rubric***

<b>Indicator I-A. Curriculum: Ensures that all instructional staff design effective and rigorous standards-based units of instruction consisting of well-structured lessons with measurable outcomes.</b>				
<b>I-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-A-2. Lesson Development Support	Does not state expectations for administrators that they establish effective strategies to ensure development of well-structured lessons, does not provide training or support, and/or does not discriminate between strong and weak strategies for ensuring effective lesson-planning practices.	Provides limited training to administrators on how to establish effective strategies for ensuring that educators develop well-structured lessons and/or does not consistently identify and/or address patterns when there is evidence of a weak strategy being employed.	<b>Supports administrators to learn and establish effective strategies for ensuring that educators develop well-structured lessons with challenging, measurable objectives and appropriate student engagement strategies, pacing, sequence, activities, materials, technologies, and grouping.</b>	Supports administrators to collaborate on developing strategies that enable educators to consistently develop series of interconnected, well-structured lessons with challenging objectives and appropriate student engagement strategies, pacing, sequence, materials, and grouping and identifies specific exemplars and resources in each area. Is able to model this element.

**Indicator I-B. Instruction: Ensures that practices in all settings reflect high expectations regarding content and quality of effort and work, engage all students, and are personalized to accommodate diverse learning styles, needs, interests, and levels of readiness.**

<b>I-B. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
I-B-1. Instructional Practices	Does not look for evidence of and/or cannot accurately identify ways that principals identify effective teaching strategies when the principals observe practice and review unit plans..	While the superintendent may observe principal practice and artifacts, s/he only occasionally looks for evidence that principals are identifying effective teaching strategies and practices when they observe practice and review unit plans.	<b>While observing principal practice and artifacts, ensures that principals identify a variety of effective teaching strategies and practices when they observe practice and review unit plans.</b>	While observing principal practice and artifacts, ensures that principals know and employ effective strategies and practices for helping educators improve instructional practice. Is able to model this element.
I-B-2. Quality of Effort and Work	Does not set high expectations for the quality of content, student effort, and/or student work district-wide, or expectations are inappropriate.	May set high expectations for the quality of content, student effort, and student work district-wide, but allows expectations to be inconsistently applied across the district.	<b>Sets and models high expectations for the quality of content, student effort, and student work district-wide and supports administrators to uphold these expectations consistently.</b>	Sets and models high expectations for the quality of content, student effort, and student work district-wide and empowers administrators, educators and students to uphold these expectations consistently. Is able to model this element.
I-B-3. Diverse Learners' Needs	Does not look for evidence of and/or cannot accurately identify ways that principals identify effective teaching strategies and practices that are appropriate for diverse learners.	While the superintendent may observe principal practice, s/he only occasionally looks for evidence that principals are identifying effective teaching strategies and practices that are appropriate for diverse learners when they observe practices and review unit plans.	<b>While observing principal practice, ensures that principals look for and identify a variety of teaching strategies and practices that are effective with diverse learners when they observe practices and review unit plans.</b>	Employs strategies that ensure that principals know and consistently identify teaching strategies and practices that are meeting the needs of diverse learners while teaching their content. Is able to model this element.

<b>Indicator IV-A. Commitment to High Standards: Fosters a shared commitment to high standards of service, teaching and learning with high expectations for achievement for all.</b>				
<b>IV-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>

<b>IV-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
IV-A-1. Commitment to High Standards	Does not encourage high standards of teaching and learning or high expectations for achievement with the administrator team, and/or may demonstrate low expectations for faculty and staff.	May ask administrators for commitment to high standards of teaching and learning with high expectations for achievement for all but does not support and/or model it.	<b>Fosters a shared commitment to high standards of teaching and learning, for all administrators, with high expectations for achievement for all.</b>	Leads administrators in developing a shared commitment to high standards of teaching and learning with high expectations for achievement for all. Revisits and renews commitment with administrator team regularly. Is able to model this element.

**Indicator IV-D. Continuous Learning: Develops and nurtures a culture in which staff members are reflective about their practice and use student data, current research, best practices and theory to continuously adapt practice and achieve improved results. Models these behaviors in the administrator's own practice.**

<b>IV-D. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
IV-D-1. Continuous Learning of Staff	Accepts the practice of administrators working largely in isolation, without consideration of data and best practices, and/or discourages reflection among administrators, faculty and staff.	May encourage administrators to reflect on the effectiveness of interactions with faculty and students and to use data and best practices to adapt practice but does not support administrators in these practices.	<b>Leads all administrators and teams to reflect on the effectiveness of interactions with faculty and students. Ensures that administrators use data, research, and best practices to adapt practice to achieve improved results.</b>	Models for administrators how to reflect on the effectiveness of interactions with faculty and students and uses data, research, and best practices to adapt practice to achieve improved results. Supports all educators to work in teams as often as is feasible and appropriate. Is able to model this element.

### **2013-2014 District Goal Reference:**

**Goal I – 4:** In an effort to narrow the achievement gap, APS will provide students in subgroups additional support in order to improve their achievement on the state accountability assessments, as measured at each school by an annual or cumulative Progress and Performance Index (PPI) of at least 75 in the aggregate and in the high needs subgroups.

**Goal I – 5:** Scores for students in the aggregate at each grade level tested on the state accountability assessments in the areas of Mathematics and English Language Arts will evidence a Student Growth Percentile (SGP) of 51 or higher.

**Goal II – 3:** Administrators and teachers will be provided professional development and planning time to be able to systematically and routinely use data to guide instructional decisions and meet students' learning needs.

**Goal II – 4:** The District will support its administrators and teachers through professional development opportunities that are aligned to the needs of its staff, including instructional support and content knowledge, coaching, technology competence and ability to differentiate instruction.



**District Goal III -4**  
**2014-2015**  
**Superintendent Annual Educator Plan**  
**Submitted by: Kathleen Bodie**  
**January 2015**

***District Goal III - 4:*** Develop a plan to address space issues related to enrollment growth anticipated over the next 3 to 5 years to be presented to the School Committee by September 2015.

***Key Actions:***

1. Gather relevant documents that will be needed in the analysis of space required for enrollment growth, which will include, but not limited to, enrollment projections for the last three years, school floor plans, 2015 birth data, survey of available classrooms in each school, enrollment growth projections for the preschool, special education substantially separate classroom enrollment and projected growth, town space that could be available for school use, and potential sites for portable classrooms.
2. Develop a letter outlining the project with expected product and due date (August 15, 2015) to architectural consultants for project quotes (January).
3. Select consultant for the study (late February).
4. Meet with the consultant to clarify scope and parameters of the project and questions that need to be answered (end of March).
5. Periodically meet with consultant to review progress and answer questions, which will likely include school tours.
6. Meet periodically with the Facility Subcommittee of the School Committee to report on interim progress and findings.
7. Review draft report with consultant.
8. Present the report to School Committee in September 2015.

***Benchmarks:***

1. Plan that outlines options to address the space needs of the district for the next 3 – 5 years, as well as periodic updates to the School Committee on the progress of the study.

**Superintendent Standards Reference:**

***Superintendent Standards & Indicators Rubric***

***Standard II: Management and Operations.*** Promotes the learning and growth of all students and the success of all staff by ensuring a safe, efficient, and effective learning

*environment, using resources to implement appropriate curriculum, staffing, and scheduling*

<b>Indicator II-A. Environment: Develops and executes effective plans, procedures, routines, and operational systems to address a full range of safety, health, and emotional and social needs.</b>				
<b>II-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
II-A-1. Plans, Procedures, and Routines	Does not organize the district effectively for orderly and efficient movement of students.	May establish plans, procedures, and routines to guide administrators, but student entry, dismissal, meals, class transitions, assemblies, and recess are not consistently orderly and/or efficient.	<b>Develops systems, plans, procedures, and routines for administrators to implement that generally ensure orderly and efficient student entry, dismissal, meals, class transitions, assemblies, and recess.</b>	Establishes systems, plans, procedures, and routines that empower administrators, students and staff to implement orderly and efficient student entry, dismissal, meals, class transitions, assemblies, and recess. Is able to model this element.
II-A-2. Operational Systems	Fails to establish systems and procedures to support custodial and/or other staff, so that the campus is not generally clean, attractive, welcoming, and/or safe.	Develops systems and procedures that result in inconsistent supervision and/or support of custodial and other staff, resulting in a campus that is not consistently clean, attractive, welcoming, or safe.	<b>Develops systems and procedures for the effective supervision and support of custodial, clerical, food services, and other staff effectively so that the campus is clean, attractive, welcoming, and safe.</b>	Creates and maintains a district environment in which custodial and other staff take personal responsibility for keeping the campus clean, attractive, welcoming, and safe. Is able to model this element.

**District Goal III -4**  
**2014-2015**  
**Superintendent Annual Educator Plan**  
**Submitted by: Kathleen Bodie**  
**January 2015**

***District Goal III - 4:*** Develop a plan to address space issues related to enrollment growth anticipated over the next 3 to 5 years to be presented to the School Committee by September 2015.

***Key Actions:***

1. Gather relevant documents that will be needed in the analysis of space required for enrollment growth, which will include, but not limited to, enrollment projections for the last three years, school floor plans, 2015 birth data, survey of available classrooms in each school, enrollment growth projections for the preschool, special education substantially separate classroom enrollment and projected growth, town space that could be available for school use, and potential sites for portable classrooms.
2. Develop a letter outlining the project with expected product and due date (August 15, 2015) to architectural consultants for project quotes (January).
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4. Meet with the consultant to clarify scope and parameters of the project and questions that need to be answered (end of March).
5. Periodically meet with consultant to review progress and answer questions, which will likely include school tours.
6. Meet periodically with the Facility Subcommittee of the School Committee to report on interim progress and findings.
7. Review draft report with consultant.
8. Present the report to School Committee in September 2015.

***Benchmarks:***

1. Plan that outlines options to address the space needs of the district for the next 3 – 5 years, as well as periodic updates to the School Committee on the progress of the study.

**Superintendent Standards Reference:**

***Superintendent Standards & Indicators Rubric***

***Standard II: Management and Operations.*** Promotes the learning and growth of all students and the success of all staff by ensuring a safe, efficient, and effective learning

*environment, using resources to implement appropriate curriculum, staffing, and scheduling*

<b>Indicator II-A. Environment: Develops and executes effective plans, procedures, routines, and operational systems to address a full range of safety, health, and emotional and social needs.</b>				
<b>II-A. Elements</b>	<b>Unsatisfactory</b>	<b>Needs Improvement</b>	<b>Proficient</b>	<b>Exemplary</b>
II-A-1. Plans, Procedures, and Routines	Does not organize the district effectively for orderly and efficient movement of students.	May establish plans, procedures, and routines to guide administrators, but student entry, dismissal, meals, class transitions, assemblies, and recess are not consistently orderly and/or efficient.	<b>Develops systems, plans, procedures, and routines for administrators to implement that generally ensure orderly and efficient student entry, dismissal, meals, class transitions, assemblies, and recess.</b>	Establishes systems, plans, procedures, and routines that empower administrators, students and staff to implement orderly and efficient student entry, dismissal, meals, class transitions, assemblies, and recess. Is able to model this element.
II-A-2. Operational Systems	Fails to establish systems and procedures to support custodial and/or other staff, so that the campus is not generally clean, attractive, welcoming, and/or safe.	Develops systems and procedures that result in inconsistent supervision and/or support of custodial and other staff, resulting in a campus that is not consistently clean, attractive, welcoming, or safe.	<b>Develops systems and procedures for the effective supervision and support of custodial, clerical, food services, and other staff effectively so that the campus is clean, attractive, welcoming, and safe.</b>	Creates and maintains a district environment in which custodial and other staff take personal responsibility for keeping the campus clean, attractive, welcoming, and safe. Is able to model this element.

## DRAFT Questionnaire for Administrators on the Superintendent

Select one answer for each statement.

1 – strongly disagree

2 – disagree

3 - agree

4 – strongly agree

NA = Not applicable – meaning that you have no input on this – I don't deal with the superintendent on this topic in my role

Question or Statement	Rating
1. The superintendent enables (with time and resources) all instructional staff to design effective and rigorous standards-based units of instruction consisting of well-structured lessons with measureable outcomes.	
2. The superintendent ensures high expectations regarding content and quality of effort and work from all students.	
3. The superintendent ensures that teaching is personalized to accommodate diverse learning styles, needs, interests, and levels of readiness.	
4. The superintendent ensures that all principals and administrators facilitate practices that propel personnel to use a variety of formal and informal assessments to measure student learning.	
5. The superintendent gives effective and timely supervision and evaluation.	
6. Evaluation by the superintendent is in alignment with state regulations and contract provisions.	
7. The superintendent uses multiple sources of evidence related to student learning—including state, district, and school assessment results and growth data—to <b>inform school and district goals</b> .	
8. The superintendent uses multiple sources of evidence related to student learning—including state, district, and school assessment results and growth data—to <b>improve organizational performance</b> .	
9. The superintendent uses multiple sources of evidence related to student learning—including state, district, and school assessment results and growth data—to <b>improve educator effectiveness and student learning</b> .	
10. The superintendent promotes the learning and growth of all students and the success of all staff by cultivating a shared vision that makes powerful teaching and learning the central focus of schooling.	
11. The superintendent develops and executes effective plans, procedures, routines, and operational systems to address <b>safety needs of students and staff</b> .	
12. The superintendent develops and executes effective plans, procedures, routines, and operational systems to address <b>health and emotional &amp; social needs of students and staff</b> .	

Question or Statement	Rating
13. The superintendent implements a cohesive approach to recruiting and hiring that promotes high-quality and effective practice.	
14. The superintendent implements a cohesive approach to induction, development, and career growth that promotes high-quality and effective practice.	
15. The superintendent supports and enables the use of data and time for collaboration to better inform teaching and learning in the district.	
16. The superintendent understands and complies with state and federal laws and mandates.	
17. The superintendent understands and complies with school committee policies and collective bargaining agreements.	
18. The superintendent acts in an ethical manner.	
19. The superintendent develops a budget that supports the district's vision, mission, and goals.	
20. The superintendent allocates and manages expenditures consistent with district- and school-level goals and available resources.	
21. The superintendent promotes the learning and growth of all students and the success of all staff by ensuring a safe, efficient, and effective learning environment.	
22. The superintendent uses resources to implement appropriate curriculum, staffing, and scheduling.	
23. The superintendent actively ensures that all families are welcome members of the classroom and school community.	
24. The superintendent actively ensures that all families who want to can find a way to contribute to the effectiveness of the classroom, school, district, and community.	
25. The superintendent continuously collaborates with families and community stakeholders to support student learning and development at home, school, and in the community.	
26. The superintendent engages in regular, two-way, culturally proficient communication with families and community stakeholders about student learning and performance.	
27. The superintendent ensures that family and community concerns are addressed in an equitable, effective, and efficient manner.	
28. The superintendent promotes the learning and growth of all students and the success of all staff through effective partnerships with families, community organizations, and other stakeholders that support the mission of the district and its schools.	
29. The superintendent fosters a shared commitment to high standards of service, teaching, and learning with high expectations of achievement for all.	
30. The superintendent ensures that policies and practices enable staff members and students to interact effectively in a culturally diverse	

Question or Statement	Rating
environment in which students' backgrounds, identities, strengths, and challenges are respected.	
31. The superintendent demonstrates <b>strong interpersonal communication skills</b>	
32. The superintendent demonstrates <b>strong written communication skills</b>	
33. The superintendent demonstrates <b>strong verbal communication skills</b>	
34. The superintendent develops and nurtures a culture in which staff members are reflective about their practice and use student data, current research, best practices, and theory to continuously adapt practice and achieve improved results.	
35. The superintendent is reflective about her practice and use student data, current research, best practices, and theory to continuously adapt practice and achieve improved results.	
36. The superintendent successfully and continuously engages all stakeholders in the creation of a shared educational vision in which every student is prepared to succeed in postsecondary education and become a responsible citizen and global contributor.	
37. The superintendent employs strategies for responding to disagreement and dissent, constructively resolving conflict and building consensus.	
38. The superintendent promotes the learning and growth of all students by nurturing and sustaining a district wide culture of reflective practice, high expectations, and continuous learning for staff.	
39. The superintendent promotes the success of all staff by nurturing and sustaining a district wide culture of reflective practice, high expectations, and continuous learning for staff.	
40. The superintendent listens to all sides and takes many points of view into account when making decisions.	
41. The superintendent is fair and open in all deliberations.	
42. The superintendent creates a district that works well together, building on strengths and using district resources well.	
43. The superintendent is approachable and open to new ideas and ways of doing things.	
44. The superintendent is a forward thinker.	
45. The superintendent is well respected in the Arlington Public Schools by staff.	
46. The superintendent makes timely decisions based on ample information, data collection, and investigation.	
47. The superintendent believes in and works toward the constant improvement of the Arlington Public Schools.	
48. The superintendent represents our school district well.	

Comment

March 5, 2015

Arlington School Committee  
869 Massachusetts Avenue  
Arlington MA 02476

Dear Members of the Arlington School Committee,

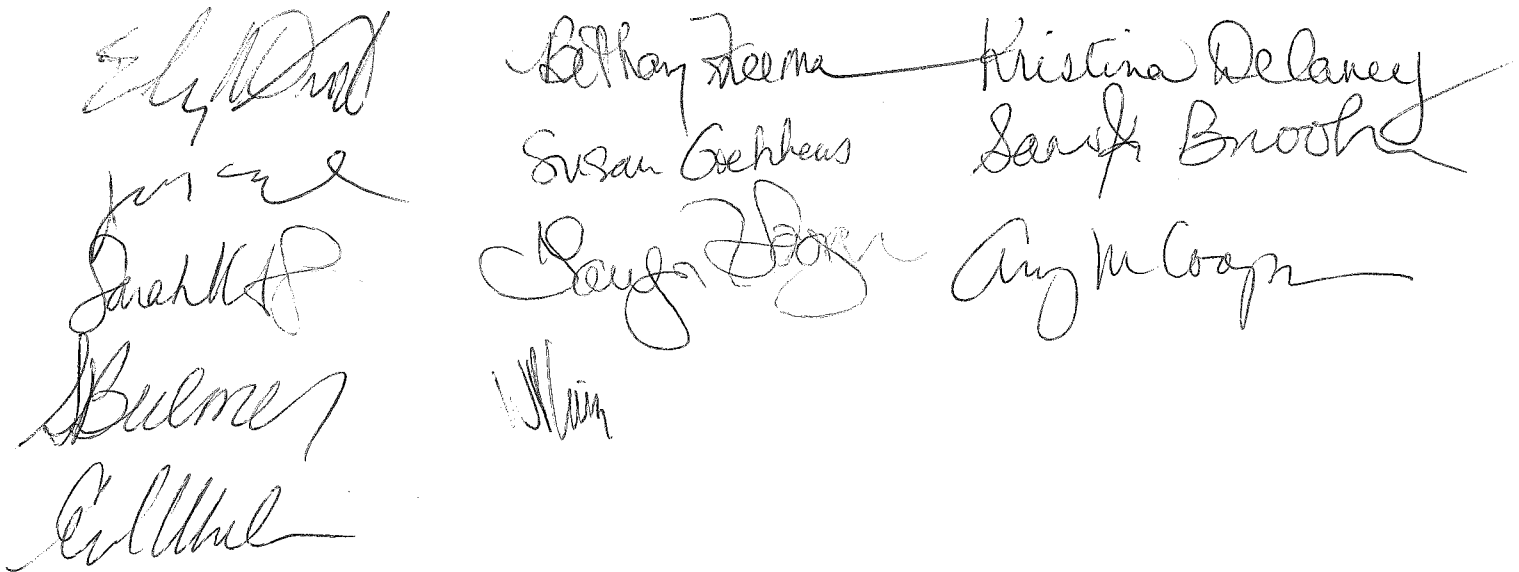
We are writing in support of the proposed plan to change the elementary school schedule to release students at 1 PM every Tuesday and extend the school day until 2:30 PM on the other days of the week.

As parents, we would welcome a consistent early release schedule because it allows pre-planning of work schedules, gives more flexibility for scheduling after-school appointments, and lets us develop a routine for early-release days.

We favor giving teachers regular weekly planning time so that they can collaborate and address issues in a timely way, rather than having to either wait until the next early-release day, or try to carve out time in their already busy schedules. Our children have already benefited from the collaboration that is taking place among the grade-level teachers as well as among the teachers, coaches, and support staff and we would like to see that collaboration increase. With the increase in federally- and state-mandated objectives, having more planning time is critical for achieving those objectives and also our in-district goals.

Obviously this is a significant change that will affect families, but we feel that it is a net-positive change. We hope that the Arlington School Committee will work with the Arlington Education Association to finalize the proposal and publicize the details with enough lead time to minimize the impact on the elementary school communities.

Yours truly,

A collection of handwritten signatures in black ink. On the left, there are four signatures stacked vertically. In the center, there are three signatures, with a fourth signature below them. On the right, there are three signatures stacked vertically. The signatures are written in a cursive, flowing style.

(Peirce School parents:

Elizabeth Orrell, Bethany Freeman, Kristina Delaney, John Kohl, Susan Goetzheus, Sandi Brooks,  
Sarah Forney, Taryn Hogan, Amy M. Cooper, Sherri Bulmer, William Lavin, Erin Whalen)



**ARLINGTON PUBLIC SCHOOLS**
**MONTHLY ENROLLMENT MARCH 2015**

HIGH SCHOOL		MIDDLE SCHOOL		METCO	
Freshmen	307	Grade 6	392	AHS	16
Sophomores	277	Grade 7	342	Ottoson	26
Juniors	305	Grade 8	371	Bishop	11
Seniors	311			Dallin	2
				Hardy	8
				Peirce	6
				Stratton	2
<b>Total</b>	<b>1,200</b>	<b>Total</b>	<b>1,105</b>	<b>Total</b>	<b>71</b>

ELEMENTARY	SCHOOLS	Bishop	Brackett	Dallin	Hardy	Peirce	Stratton	Thompson	Total
5	Classroom #1	20	23	23	19	21	19	28	
	Classroom #2	21	24	24	19	21	23	28	
	Classroom #3	21	22	24	19		24		
	Classroom #4								
	<b>subtotal</b>	<b>62</b>	<b>69</b>	<b>71</b>	<b>57</b>	<b>42</b>	<b>66</b>	<b>56</b>	<b>423</b>
4	Classroom #1	23	19	21	24	20	20	27	
	Classroom #2	23	21	22	24	20	22	28	
	Classroom #3	25	22	22			22		
	Classroom #4		22	23					
	<b>subtotal</b>	<b>71</b>	<b>84</b>	<b>88</b>	<b>48</b>	<b>40</b>	<b>64</b>	<b>55</b>	<b>450</b>
3	Classroom #1	25	23	18	22	23	21	25	
	Classroom #2	26	18	18	23	23	22	25	
	Classroom #3	26	23	19	23		23		
	Classroom #4		22	20					
	<b>subtotal</b>	<b>77</b>	<b>87</b>	<b>75</b>	<b>68</b>	<b>46</b>	<b>66</b>	<b>50</b>	<b>469</b>
2	Classroom #1	23	20	20	21	22	23	18	
	Classroom #2	23	23	20	22	22	24	20	
	Classroom #3	24	23	22	23		24	20	
	Classroom #4							22	
	<b>subtotal</b>	<b>70</b>	<b>66</b>	<b>62</b>	<b>66</b>	<b>44</b>	<b>71</b>	<b>80</b>	<b>459</b>
1	Classroom #1	24	18	19	20	22	21	23	
	Classroom #2	24	21	20	22	22	21	23	
	Classroom #3	25	21	20	24		23	24	
	Classroom #4		21	20					
	<b>subtotal</b>	<b>73</b>	<b>81</b>	<b>79</b>	<b>66</b>	<b>44</b>	<b>65</b>	<b>70</b>	<b>478</b>
Kindergarten	Classroom#1	24	24	25	20	21	19	20	
	Classroom #2	24	24	25	20	21	21	20	
	Classroom #3	24	25	26	21		23	21	
	Classroom #4		22		21			22	
	<b>subtotal</b>	<b>72</b>	<b>95</b>	<b>76</b>	<b>82</b>	<b>42</b>	<b>63</b>	<b>83</b>	<b>513</b>
SLC	School Wide		<b>15</b>	<b>11</b>			<b>17</b>		<b>43</b>
ELEMENTARY	<b>TOTALS</b>	<b>425</b>	<b>497</b>	<b>462</b>	<b>387</b>	<b>258</b>	<b>412</b>	<b>394</b>	<b>2,835</b>

**Please Note:** Both the middle school and high school did not complete this sheet, so although, data has been pulled from Power School by the data department, it has not been verified by the secretary of each of these schools.